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ARTICLE I.

St. Louis and the Southern Trade.

We have so often discussed the advantages to be derived from establishing a well-defined system of commerce embracing the Southern and Western States, that we should not advert to the subject at present, but for the reason that certain events now in process of development seem to claim immediate consideration.

Without reiterating views and arguments published from time to time in the Western Journal and Civilian, we shall at once assume that a great commercial city must arise in the Valley of the Mississippi which will constitute the center of a commercial system, embracing the entire region between the Alleghany and the Rocky Mountains, and extending north and south from the Gulf of Mexico to the British Possessions. This seat of commerce must be on the bank of the Mississippi river, and we are persuaded that every well-informed, unprejudiced mind will admit that St. Louis is destined to be its point of location. In making this declaration, we desire to remark for the benefit of those who are not constant readers of the Western Journal and Civilian, that we have not been nor are we now the advocates of building up great cities for the special benefit of those who may happen to reside in them. Cities are the nurseries of many degrading and dangerous vices, but they are necessary to the present state of civilization; and therefore we advocate their growth as a means of developing the resources of the country at large, and of promoting the prosperity of its inhabitants. We admit that we rejoice in the growth of St. Louis, but it is chiefly because its advancement is calculated to counteract the commercial influence of the eastern cities, to establish a system of internal commerce and finance, which shall control foreign trade,

and give strength and permanency to the social and political institutions not only of the Western and Southern States, but of the whole Union. Hence, whenever we refer to the present interests or future greatness of St. Louis, we beg that our readers will regard us as treating a national rather than a local subject.

In one, and that the most important view, St. Louis possesses but very little southern trade. It is true, she ships large quantities of western produce to New Orleans, whence it is either forwarded to more distant markets, or distributed to southern consumers; but in either case it brings no trade to this point: it only passes here in *transitu* to other markets, where it constitutes the basis of commercial operations between dealers and consumers. Now it is obvious, that if all the produce thus shipped could be sold and distributed directly to the consumers, or to the smaller towns in the interior, the trade of St. Louis would be greatly enlarged, perhaps doubled by the operation. We possess, in first hands, most of the staples required for the use and consumption of the southern planter; why, then, should he be taxed with storage, commissions and profits to dealers at New Orleans? We know there is a convenience in purchasing these commodities at the place where he sells his own produce, but he would experience little inconvenience in purchasing here, and paying in bills on his factor at New Orleans; or, if he deals with a country merchant, it would doubtless be to the advantage of the latter, to purchase here, instead of buying from second hands. It may, however, sometimes occur, that owing to an overstocked market and other causes, articles of western produce may be obtained as cheap at New Orleans as at St. Louis, but these are exceptions to the rule, that the price of all commodities must be lowest in the hands of the producer. Were it otherwise, the carrier, the warehouse man and the dealer would all loose their labor and in time their capital also.

We are aware that the want of facilities of transportation makes it difficult to establish commercial intercourse between St. Louis and the interior towns of the Southern States; but this has not prevented the cities on the Ohio from opening and carrying on an extensive business in that direction.

St. Louis is more convenient to all the States west of Georgia than Cincinnati; and nearer and more accessable by water to the Cumberland and all the tributaries which flow into the Mississippi below that stream than Louisville. But Cincinnati and Louisville

being older commercial cities than St. Louis, took the start of her in the southern trade, and still enjoy it without any serious competition. Perhaps it was wise on the part of St. Louis, that she did not enter into competition for this trade at an early day, but we are persuaded that the time has come, when she can no longer yield it to others without compromising her claims to that exalted destiny indicated by nature and by the opinions of enlightened men throughout the country. She must become the emporium of the south as well as of the north and the west, before she can claim rank with the great producing and commercial cities of other countries. It depends, in a good degree, upon her own citizens now living and acting in their respective spheres, whether she will attain that pre-eminence among the cities of the United States, which is generally admitted to be within her power.

The several systems of public improvement already projected in the Western States, are, with some slight exceptions, as favorable to the prosperity of St. Louis as her citizens could desire; but it will be some years before she can fully realize the benefits which they are calculated to impart. In the meantime, her merchants and manufacturers should be vigilant and active in extending their business relations into districts which have heretofore received their supplies from other markets.

The opening of a communication by Railroad between this point and the fertile valley of the Wabash, is an event which should be improved without delay. That valley, throughout its whole extent, lies at about an equal distance from St. Louis and Cincinnati, and is therefore to be regarded as debateable ground. The former has not only the advantage of being nearer to New Orleans than the latter, but possesses better navigation throughout the year, and, consequently, can supply the Wabash valley with sugar and other southern products upon better terms. Therefore, the enterprise and business qualifications of the citizens of these respective points being equal, St. Louis must prevail in securing the larger portion of the trade of that region. Here, then, is an extensive and rich field opened for the enterprise and skill of our merchants and manufacturers; and possessing the vantage ground, it would be disreputable to them as business men, should they fail to draw the trade of the Wabash valley to this point. Should St. Louis succeed in the contest for this trade, it will be, in a commercial point of view, the most interesting event that has ever occurred in the valley of

the Mississippi. It will be the first check to the current of commerce in an eastern direction, and give more strength to St. Louis than the acquisition of double the amount of trade obtained from the west. To the manufacturer, it will present St. Louis in a new light, and be the means of attracting an amount of capital and skill which will in a few years place St. Louis in the front rank of producing cities west of the Alleghanies. These are not random remarks made without consideration and thrown out for effect; the consequences which we predict, are justly infered from the laws of industry and commerce. Manufactures cluster around the great centers of commerce by the force of laws, not less certain in their operations than those which govern the revolutions of the planets. Heretofore the Western States have been embraced in a commercial system, whose seat is on the Atlantic coast, and manufactures have grown up at and around the center of that system, because the facilities of obtaining all the means of producing as well as of distributing their commodities, were greater there than at points remote from it. So, likewise, when a distinct system of commerce shall be established in the west, manufacturing capital and skill will flow to its center with unerring certainty.

To the working of the raw material of the central region will be added the great staple of the south, and St. Louis will become the best customer of the southern planter, because she will be able to supply him with the leading articles required to carry on his operations upon better terms than can any city east of her.

In view of these events, it behooves the merchants and manufacturers of St. Louis to make themselves and their business known to the people of the Southern States, and avail themselves of every facility which may be opened to extend their business throughout the interior of that region.

Many important improvements are now in course of construction, and others contemplated by the people of the south; and could they be made to appreciate the advantages to be derived from a trade with the Northwestern States, it is reasonable to conclude that many of these improvements would be projected with a view to a connection with the western systems of railroads at St. Louis. Indeed, improvements have already been made in the south which should not be overlooked by western dealers. The first among these is the *Jefferson and Lake Pontchartrain Railway*, uniting the Mississippi above New Orleans with the lake, and sav-

ing much of the expense of transporting produce and other commodities from the Mississippi to Mobile, the great distributing point for the State of Alabama.

Since the opening of this line, we see no good reason why a direct trade should not be opened between St. Louis and Mobile, and even with Montgomery and other towns on the Alabama and Tombigbee rivers. It is probable that within another year the Mobile and Ohio railroad may be completed. This will afford access to a valuable trade in Southwest Kentucky, West Tennessee, East Mississippi and Southwest Alabama, embracing the valley of the Tombigbee, one of the most productive cotton districts of the Southern States. Here is another commercial field worth contending for, and no time should be lost by the merchants and manufacturers of St. Louis in preparing for the contest.

The time is propitious for making a favorable impression on the southern mind. The unwarrantable interference of northern fanatics with the institution of slavery, has prepared the southern people to take a favorable view of the St. Louis trade, and the citizens of this city would not deserve their patronage, were they to fold their arms and coldly wait for them to make the first advance. It is the true policy of St. Louis to take the initiatory step. Her merchants should visit the Southern States, and exchange views with southern men, make known their resources, and advertise in southern papers. A knowledge of the extent and variety of this market is all that can be necessary to bring orders here for many commodities that are now obtained at Cincinnati and other places on the Ohio. The pioneers in this trade may not find it very profitable in the beginning; but if managed with good judgement, it will not be long before they will begin to reap a rich harvest as the reward of their labor and enterprise. Besides, they will be public benefactors to both the south and the west, and enjoy the pleasing reflection of having promoted the general prosperity of the country while laying the foundation of their own fortunes.

The benefits of such an intercourse would be felt long before the avenues of trade are fully opened. For were it generally known and believed that the trade of the Southwestern States would go to St. Louis in preference to the cities on the Ohio river, it would greatly encourage the building of manufactories at this point, to meet the southern demand. In some branches of manufactures at St. Louis, the capacity of producing is believed to be equal to the

demand within her present range of commerce. This, according to our understanding, is the fact in respect to refined sugar, flour, lead in its various commercial forms, and perhaps some other commodities of less value. It would be an easy matter to enlarge the production of these commodities as the demand increases.

Iron, as we believe, is destined to be the leading staple of St. Louis industry. Its manufacture into almost every useful form, is being established upon a large scale; but immense capital is still required to be invested in this business to fill the present demand. Indeed, were St. Louis able to supply the demand of this year, the increasing population of the west, and the new objects for which iron is continually wanted, would increase the demand of next year perhaps twenty per cent. When we take into view the geographical relations of St. Louis, the system of navigation at whose center she is located, the extensive systems of railways connecting at this point, and the inexhaustible stores of metal and coal which lie within a convenient distance of her mills, foundries and work shops, we are compelled to conclude that she is destined to become the most extensive iron market in this or any other country. Indeed, this branch of industry alone with the trade connected with it, would make her a mighty city.

The manufacture of hemp into commodities suitable to southern use, is also being established upon a liberal scale; and as hemp-growing in this country is and will probably continue to be confined chiefly to slave labor, Missouri must furnish a very large proportion of the bagging and cordage required for baling the cotton produced in the Southern States.

Without further enumeration of our staples, it will be perceived by our southern friends that St. Louis is already in a condition to supply them, at least in part, with that class of commodities produced by American industry which is most essential to their wants.

To unite the Western States from the Gulf of Mexico to the northern boundary of the Union by bonds of sympathy, and cement them together by a common interest; to stay the progress westward of the ancient prejudices, which have so much divided the north from the south, and establish a cordial fraternal sentiment throughout the breadth of the land, has long been and is still the most cherished object of our life, and we are persuaded that commerce and the intercourse and relations which flow from it, are the most

efficient, if not the only means by which these ends can be obtained.

While entertaining and acting upon this opinion, we do not forget that there are other and more excellent principles which should unite mankind in a common brotherhood; but we are persuaded that we have not attained to a state of civilization which admits of the influence of those principles to an extent that will bind the union of the States permanently together without the aid of commerce.

Hence wh looking to the conservation and improvement of human institutions, the philanthropist and statesman must adopt the best means in their power for the attainment of their objects, and trust to a wise providence and the labors of those who may succeed them to establish the moral and social condition of the human family upon a better foundation.

St. Louis can do but little more to connect herself with the south by means of public improvements, when the works already undertaken and contemplated shall have been completed. And even these are less essential, so far as respects the southern trade east of the Mississippi, than personal intercourse and well directed individual enterprise. A small amount of money and time spent in this way, would be far more profitable than much larger investments in railroads. A short sojourn in the Southern States by a few intelligent merchants from St. Louis would awaken a spirit of inquiry which could scarcely fail to lead to results highly beneficial to all parties. This is a branch of the subject which we beg to commend to the consideration of the St. Louis Board of Trade, with the suggestion that a few thousand dollars could not be better employed than in making known the nature and extent of the commerce of this city.

In the meantime, we propose to contribute our mite in statistics and facts relating to manufactures and commerce, collected from the most authentic sources at our own charge.

ARTICLE II.

Valley of the Ohio.

BY MANN BUTLER, ESQ.

Continued from page 92, Vol. XIV, No. 2.

French intrigues to confine the West; Clark's expedition against the Wabash Indians, in 1786; First failure of that officer; Change in Clark's character; His wrongs; Honors of Virginia to Clark; Person of Clark; Daniel Boone; His true character; Col. John O'Fallon, nephew of Gen. Clark.

This is not the place to expatiate upon the honorable termination to the labors and sacrifices of the patriots and sages of the Revolution; but the incidental operation of peace on our domestic hostilities, most strictly appertains to the history of the West. The Indians, alarmed at the approaching loss of their powerful British allies, who had fed and clothed and armed them against their most hated enemy, suspended their incursions on the white settlements for a brief period. During this rare interval of armistice between the two races in the Valley of the Ohio, it may be interesting to notice again the attempts which had been made in the negociations for peace, to *sever* the whole Valley of the Ohio from the rest of the confederacy—indeed to limit the new republic by the Alleghany mountains on the West. The first step in this insidious intrigue was taken by Count Lucern, the French envoy, at Philadelphia, in conformity with instructions from the Count De Vergennes, the French minister of State. On the arrival of the former gentleman at the seat of the American government, he lost no time in pressing on Congress certain instructions to be given their ministers at Paris, pursuant to the following ideas: 1. "That the United States extend to the westward no further than settlements were permitted by the British proclamation of 1763;" 2. "That the United States do not consider themselves as having any right to navigate the Mississippi, no territory belonging to them being situated thereon." 3. "That the settlements east of the Mississippi (embracing Kentucky with her southern neighbors) which were prohibited as above, are possessions of the crown of Great Britain, and proper objects against which the arms of Spain may be employed for the purpose of making a permanent conquest for the Spanish crown."*

Indian depredations and apprehension for the navigation of the Mississippi now engaged the public mind. In regard to the first, Indian incursions began again, after a short interval. From 1783

* Pilkin, 2, 92.

to 1790, a little later than the time of this portion of the history of the Valley, "fifteen hundred persons, including women and children, had been killed or taken prisoners by the enemy south of the Ohio; besides taking two thousand horses, and property to the amount of fifty thousand dollars."*

To punish the irruptions of the Indians, an expedition into the Indian country, particularly on the Wabash, was determined on, under the old and favorite leader of the West, Gen. George Rogers Clark. About a thousand men assembled at Louisville, in the course of September, 1786.† The provisions were sent up the Wabash in keelboats to ascend that river, as high as Vincennes, (the old St. Vincents of earlier times.) The expedition proceeded by land to this place, and lay for nine days awaiting the arrival of their transports. These had been delayed by low water in the Wabash, until by imperfect curing and the heat of the weather, one half of the stores was spoiled, and that which the men had taken with them was exhausted, except a few bullocks. This delay proved fatal to the expedition; with irregular troops, delay is equivalent to defeat. A spirit of discontent soon manifested itself in camp, even before the arrival of the boats, and before the state of the supplies was known; afterwards it showed itself more openly. The absence of Col. Logan with his veteran followers, may have contributed to this disgrace; he might have helped his old commander to keep the troops in subordination. The men were necessarily placed on short allowance; but this had not been uncommon with the pioneers, and they marched towards the Indian towns, which were situated about the mouth of Vermilion river.‡ Previous restlessness soon became positive disaffection, "fomented by some officers of rank who were displeased with the General.§" This state of things eventuated in three hundred men deserting in a body, when it was believed there were but two days march from the Indian towns on the Vermilion river, near its mouth in the Wabash.¶ In vain the gallant veteran, who had never yet led his countrymen to defeat, addressed the mutineers "in the most soothing and

* Judge Innes, in Political Transactions, an interesting pamphlet, by the late William Littell, a lawyer of great learning, in Kentucky, published at Frankfort, Ky., by Wm. Hunter, in 1806 or 1807.

† The correction of this date by the Rev. Mr. Perkins is cheerfully admitted. Annals, 279, 1st edit.

‡ Ouiatanon, ar Wea, a little below the town of La Fayette on the Wabash.

§ Marshall, I, 249

¶ Dillon, 202–3.

earnest terms of entreaty to stay and accomplish the object of the expedition, by a conquest both certain and easy."* The evil spirit of discontent possessed the troops; and they obstinately returned home without seeing an enemy or striking a blow. Still there was a residue left, greater, enormously greater than the whole Illinois regiment, and many other gallant bands, that had, in earlier times, penetrated into the very heart of the country, spreading dismay and destruction before them. But there was something wanting in this expedition, more essential than numbers: without which the largest numbers only increase the spoil of an enemy; it was a manly and patriotic subordination to orders, and an honorable confidence in their commander. Never had Gen. Clark led so unfortunate a party; hitherto victory seemed to hang on his banner with delight, and for him to appear, was to conquer.

At the same time, mournful as the truth is, and reluctantly as the confession is wrung from the author, Gen. Clark "was not the man he had been;"† he was no longer the same man, who had conquered Kaskaskia and captured Vincennes. His mind was wounded by the neglect of Virginia to settle his accounts for the great expedition, which had stretched the republic to the Mississippi. Private suits had been brought against him for public supplies, which ultimately swept away his private fortune; and with this injustice, the spirits of the hero fell; he never recovered these energies which had stamped him in the noblest mould of a commander. A too ready and extensive conviviality engendered by military and social habits completed the ruin, which ingratitude had begun. Clark, it is said by one of his officers,‡ however, like his former self, was opposed to waiting at Vincennes, the radical error of the expedition. He advised an immediate march with the provisions on hand to the Wea or Ouitanon towns,‖ and that the residue on the boats should be brought up by a detachment left for that purpose. Such advice bespeaks the General's former energetic character in previous expeditions into the Indian country; when a little meal mixed with sugar composed all the rations of the men. But to have thought correctly in the former course of Gen. Clark was, to have acted decisively, why was it different now? Where was the overrul-

* Marshall.

† Idem, I, 250.

‡ Capt. B. Gaines' letter to the author.

‖ The mouth of Vermilion.

ing spirit that had captured forts armed with cannon at the head of western riflemen? The melancholy answer is left to be made by every reader. As this is the last occasion on which Gen. Clark will be presented to the student of western history, it may not bo improper, although out of chronological order, to recount the remaining career of this renowned officer. The expedition returned to Vincennes, where it was disbanded with a disgrace, which has never before or since attended the arms of Kentucky. "General Wilkinson, who was at the Falls of the Ohio, wrote to a friend in Fayette, that the sun of Gen. Clark's military glory had set, never more to rise."*

It was learned, and the information was confirmed in Gen. Harrison's Tippecanoe campaign, in 1811,† that the Indians, who had retreated from their towns on the Vermilion, had selected a place for an ambuscade among the defiles of Pine creek.‡ These defiles were thus described by the former author. "This stream presents a curious spectacle in that country. For many miles before it discharges itself into the Wabash, its course is through an immense mass of rocks, the sides of which are in some instances perpendicular. Few places can be found where it can be crossed with facility." So difficult was this passage that Gen. Harrison thought it most advisable to avoid it in his march. But the hero of Kaskaskia and Vincennes was quite as likely as any other officer, not to be entrapped by the natural fortresses of the country.

It has already been mentioned, that the State of Virginia had, in honor of Gen. Clark's Illinois campaign, twice voted its thanks and accompanied them on the latter occasion with a sword. The exasperation of feeling produced by the sacrifice of his private property to make good his individual engagements for the public service in his Illinois campaign, and a high sense of public injustice to his merits, impelled him to *break this sword and cast it from him.* The particulars of this transaction the author has not been able to obtain; and when interrogated about it by a beloved sister, Mrs. Croghan, "the veteran was *agitated, frowned and would make no distinct reply.*" Although but one opinion can be entertained of the inadequacy of a sword to testify the sense of a great Commonwealth for such services as Virginia received from Gen. Clark;

* Marshall, I, 249.

† Dawson's Life of Harrison, 204.

‡ Dillon, 202.

still, there can be as little doubt, that they could not, at that day, be fully appreciated. There can be still less doubt, that Virginia, magnanimous as she always has been, never did her fame more true honor than in renewing the present of a sword which had, in the anguish of a broken heart, been snapped into atoms by her heroic but mortified soldier. Well might he apply the lines of the great English bard to himself:

> "Bite, bite, ye bitter winds,
> Ye bite not half so keen,
> As benefits forgot."

The devoted tone of the following preamble to an Act of Virginia, and the eloquent letter of Gov. Barbour, reflect high honor on Charles Fenton Mercer, the author, as well as the Governor, who is said to have adopted the draft of that letter. Gen. Mercer had visited the hero in his retirement at Locust Grove,* and had been struck with the magnitude of the old soldier's services and the ingratitude of his native State. On returning to Virginia, at the assembling of the legislature, in 1812, of which he was a member, he procured the passage of an act expressing the gratitude and friendly condolence of the General Assembly of Virginia, with the following preamble: "Whereas the General Assembly of Virginia have ever entertained the highest respect for the unsullied integrity, the valor, the military enterprise and skill of GENERAL GEORGE ROGERS CLARK, to whom, and to his gallant regiment, (aided by the justice of their cause and the favor of Heaven,) the State of Virginia was indebted for the extension of her boundaries from the Atlantic to the Mississippi; and whereas the General Assembly have been informed that the hand of misfortune has overtaken this veteran chief; and that he, whose name was once a host filling his friends with confidence, and his foes with dismay, is now himself a victim of age and disease, and a dependent on the bounty of his relatives." This preamble concluded with the enactment that the Governor of the State present a sword with suitable devices to General George Rogers Clark, "accompanied with an expression of the gratitude and friendly condolence of the General Assembly of Virginia, with an annual pension of $400, being the amount of his half pay, as Colonel of the Illinois regiment. This act of the Legislature, so honorable, though so tardy, was executed by Governor Barbour, and the following most eloquent letter accompanied

* The seat of Major Croghan, near Louisville, Ky.

the sword, dated at Richmond, October 29th, 1812. "The Representatives of the good people of Virginia convened in General Assembly, appreciating the gallant achievements during the Revolutionary war of yourself and the brave regiment under your bommand, by which a vast extension of her empire was effected, and a successful issue of the revolution greatly promoted, have assigned to me the pleasant duty of announcing to you the sentiments of exalted respect they cherish for you, and the gratitude they feel at the recollection of "your unsullied integrity, valor, military enterprise and skill." Having learned with sincere regret that you have been doomed to drink of the cup of misfortune, they have requested me to tender you their friendly condolence—permit me, sir, to mingle with the discharge of my official duty an expression of my own feelings. The history of the Revolution has always engaged my deepest attention. I have dwelt with rapture upon the distinguished part you have acted in that great drama, being always convinced that it only wanted the adventitious aid of numbers to make it amongst the most splendid examples of skill and courage, which any age or country has produced. I feel a conscious pride that the name of Clark is compatriot with my own. I, too, most sensibly sympathise with you in your adverse fate, and deeply deplore that the evening of a life, whose morning was so brilliant, should be clouded with misfortune. The General Assembly of Virginia have placed among their archives a monument of their gratitude for your services; and as a small tribute of respect have directed that a sword should be made in our manufactory with devices emblematic of your actions, and have also directed that $400 should be immediately paid, as also an annual sum of the same amount."*

It may be gratifying to another generation to know the person and appearance of Gen. Clark. My information from personal knowledge is very limited. The author enjoyed but one opportunity of seeing the hero, tho' intimate with many of his family; this was in the decline of his life, when he had long become the victim of disease and misfortune, too probably flowing from public neglect. He was staying at Major Croghan's, in his own private apartment, where every visitor to that hospitable mansion called to pay his respects to a public officer whose merits grew brighter with

* Butler's Kentucky, App. 538.

their age, and the more thorough acquaintance with them, by a new generation. His chamber was a public shrine, where every patriotic breast desired to offer worship. Gen. Clark was a tall man, of robust constitution, and athletic make; his countenance, when I saw him, had something grave and serene, with a thoughtful heavy brow. The countenance was rather comely, though not lighted up with that spirit which had breathed fire into the hearts of the western riflemen, and fear into Indian warriors. He had accidentally lost one of his legs, when the author visited him, which confined him very much to his chair. There are several portraits of this distinguished man, one in the Clark Lodge of Free and Accepted Masons, at Louisville, Ky., from which a rather indifferent miniature was taken for the first edition of Butler's Kentucky; another exists in the family, taken at an earlier date; as to their fidelity the author must refer to better authority than his own.*

The author has thus portrayed, as he best might, the hero of Kaskaskia and Saint Vincents, the founder of Kentucky, and the great warrior of the West. He has given him the prominent and leading part in the whole drama of western conquest and settlement assigned to him by the testimony of all the pioneers, and confirmed by the records of the country. This conflicts with a popular notion extensively entertained beyond the western country, that DANIEL BOONE was the principal leader and most efficient spirit among the western pioneers. No mistake can be more profound. Not that the author would for one moment ignobly try to depreciate the real merits of Boone; he adopts and endeavors to pursue the sentiment of the poet "nothing extenuate, nor aught set down in malice." Boone was an unrivalled hunter, and honest and kind-hearted woodsman, and in a subordinate capacity a good soldier; but at no period of his life did his abilities, either natural or acquired, rank him as a leading spirit of Kentucky or the west, either in council or in action. He came at first to Kentucky as a

* Col. John O'Fallon, of St. Louis, Mo., a favorite nephew of the General, with whom he spent his vacations, when his uncle was staying at the Point of Rock in Clarksville, opposite to Louisville, in Kentucky. Here it may be that the heart of the nephew was warmed into emulation by his intercourse with the old western hero, and prepared for his own gallant career, at Tippecanoe, Fort Meigs and the Thames. At the latter battle he was first Aid to Gen. Harrison in a campaign which finally subdued the Indians, and terminated this war of races and conditions in favor of civilization, liberty and religion. Col. O'Fallon still lives at St. Louis, enjoying the undiminished regards of his fellow-citizens for the noble spirit of liberality and honorable generosity with which he dispenses a fortune earned by his energy and enterprise.

private hunter from North Carolina, and afterwards, in all probability as an agent of the great land company of Henderson & Co., certainly so in 1774 and 1775. But in no one expedition of higher grade than a scouting party was Boone a leader. It is true, that he bravely participated in the bloody battle of the Blue Licks, as has been seen, and gave advice on that melancholy occasion, which if it had been adopted, might in strong probability have averted, if it had not reversed the fortunes of that disastrous encounter. In this battle he was not the commander, but Col. John Todd, of Fayette county. Did Boone ever *conceive*, much more *lead* such expeditions, as either the mission to the Virginia Convention, in 1776, which eventuated in the establishment by Virginia of Kentucky *county?* Of the Illinois campaigns in 1778 and 1779, which tended so materially to the conquest of the north-western portion of the valley of the Ohio? Or the campaigns of 1781 and 1782? In all these measures, Clark was, by the admission of all his cotemporaries, the leading spirit, and after him Col's. Floyd, Ben. Logan, John and Levi Todd, Christian and Hardin.

But here the career of Gen. Clark closes, he lived and died the honored *guest* of Major Croghan. His death took place in 1817.

There is one more tribute to the merits of Gen. Clark, which may not be omitted. When in 1785, he attended as a commissioner to treat with the northwestern Indians at Fort McIntosh, at the mouth of the Great Miami, assisted by Generals Richard Butler and Parsons, the chiefs addressed the commissioners, when Buckongahelas, the head war-chief of the Delawares, not deigning to notice the colleagues of Clark, took him by the hand and said: "I thank the Great Spirit for having this day brought together two such great warriors as Buckongahelas and General Clark."*

A more fortunate issue attended the expedition of Col. Logan, who had been detached by Gen. Clark, from his camp at Silver creek, opposite to Louisville, to return to Kentucky and raise as expeditiously as possible another party to march against the Shawanees, whose attention it was supposed would be engaged by the Wabash expedition. "This officer, at the head of four or five hundred mounted men, crossed the river Ohio, at the point where the town of Maysville now stands, and penetrated the Indian country as far as the head waters of Mad river. In the words of one

* Dawson's Harrison, App., 466, and Olden Time.

of the actors,* Col. Logan would have surprised the Indian towns against which he marched, had not one of his men deserted to the enemy, and gave notice of his approach. As it was, he burned eight large towns, and destroyed many fields of corn. He took seventy or eighty prisoners, and killed about twenty warriors, and among the rest the head chief of the nation. This last act caused deep regret, humiliation and shame to the commander and his troops." The murder of this chief was, however, perpetrated in direct violation of the orders of Col. Logan. In the course of this expedition, the Kentuckians lost about ten men.† This as usual consoled the public mind, in some degree, for the failure of Gen. Clark. This expedition, it should have been previously mentioned, had been prepared in conformity with resolutions of the inhabitants of the District assembled in convention at Danville, sometime in 1786; the month is not mentioned in the proceedings, which are signed by William Kennedy as chairman. These resolutions, together with an order of the Executive of Virginia, were acted on by a Board of officers, who met at Harrodsburg, on the 2d day of August, 1786. These gentlemen among others adopted one appointing Gen. George Rogers Clark, "to act as general officer and to have the command and direction of the army, at this time, ordered in offensive operations against our enemy Indians." This expedition has already been mentioned.

Doubts had been entertained about the legality of impressments for provisions, &c. These were submitted by the Board to Judges Muter and Wallace of the District court, and the Attorney General Innes. These officers certified it as their opinion, "that the Executive have delegated to the field officers of this district all their power" in regard to impressments; and that they have a right to impress, if necessary, all supplies for the use of the militia that may be called into service." This opinion is directed to Colonel Ben. Logan who acted as President of the Board of officers.

[To be continued.]

* The late Gen. William Lytle, of Cincinnati, Ohio.

† Dillon, 203.

ARTICLE III.

Origin of Marion College.

AN EXTRACT FROM A FORTHCOMING WORK TO BE ENTITLED "TWENTY FOUR YEARS' VIEW OF PALMYRA AND MARION COUNTY, IN MISSOURI."

By J. P. R.

(From the 2d chapter.) "About the year 1830, the Rev. Dr. Nelson, a Presbyterian minister, emigrated from Kentucky, and settled about thirteen miles northwest of Palmyra, in Marion County, in what was at that time a frontier settlement, there being but few settlers farther out in that direction—the land was mostly government land around and beyond that point—Dr. Nelson brought with him a high character for talents and piety—he had in his youth been an infidel, but since his conversion, which was many years anterior to his removal to this country, he had been much devoted to the proposition of christianity, and his powerful ministerial labors had been remarkably successful;—glowing with an ardent zeal and noble ambition, to do all in his power, like St. Paul, to advance that cause he had formerly opposed, and perhaps stimulated to a double zeal to labor for the spread of the Gospel, in order to counteract the effect of his own former opposition, and thus as far as was in his power, undo the wrong which he had committed, and which he much deplored, he, in conjunction with other members of the Presbyterian church, soon conceived a plan of erecting a college on the manual labor system, for the purpose of educating pious, poor young men for the gospel ministry. The most active of his associates in this design, were Dr. David Clark and Mr. William Muldrow, both members of the Presbyterian church. Which of the three was the originator of the scheme, we are not informed—it may have been Dr. Nelson himself—but we think it most probable that it was Muldrow, for he was emphatically a scheming man, of strong intellect, though uneducated and uncultivated, he was ever inventing some new project, on a stupendous and grand scale. Of a peculiar cast of mind, his ideas were all on a large scale, approaching the visionary; yet such was the energy of his character, that in several of his previous enterprises, thought by others to be visionary, he had gone farther in carrying them out, than it was supposed any other man could have done, under the difficulties he had to contend with and surmount. In this

way, he had raised himself from a state of poverty, not to affluence, to be sure, but to easy and independent circumstances. One of his many schemes, looked upon as Utopian, was the making of a remarkably large farm in the prairie, with very little force or assistance, which he succeeded in accomplishing by inventing a very large plow, which, by attaching about thirteen yokes of oxen to it, broke up the sod for several feet at once—he thus soon had a farm enclosed and in cultivation of about six hundred acres in one field. Thus he acquired the reputation for the possession of remarkable business capacity, and it was frequently said in common parlance, that he was "long-headed" and "could see far before him." In fact there is no doubt but that he possesses the faculty of "seeing as far into a millstone as he who pecks it," and were it not for a tendency which appears to be constitutional and irrepressible with him to run into extravagant and visionary anticipations, beyond the possibility of man, with his means to accomplish, he would indeed be as well qualified to compass large achievments as any man we ever knew;—but he, like all other men, together with high business qualifications, possesses a defect, that of improvidence and a disposition to run to extremes, which has hitherto defeated his grand projects at the moment of their fancied accomplishment. We are inclined, too, to the supposition that Mr. Muldrow first conceived the idea of the erection of a college, from a remark which we understood he made about the time the project was set on foot, that "he had been cutting down little sapplings, but was now going to cut down big trees and bore with a big auger," and from the additional fact that he entered the land at an early time around and adjoining the land which had been entered for the use of the college, with the design of laying off a town on it, which he afterwards did. Application was made to the Legislature in the winter of 1830 and 1831 for a college charter, which was granted. The college had no endowment, and not being able to raise the means to endow it extensively, the alternative was adopted of making it a self-sustaining institution, that is, to connect a farm with the college, and assign to each student a certain number of acres, which he was required to cultivate in some saleable grain, vegetable or other product for market—he being allowed so many hours each day for labor—the balance being devoted to study. There was a boarding-house to be attached to the college, at which they were to be boarded for a certain price, which was quite moderate. A

calculation was made that each student could raise on the ground allowed him for cultivation, a certain quantity of grain or other products he might choose to cultivate, which would bring in the market a certain price respectively, which was fixed upon in the estimate—and thus estimating the cost of boarding and tuition charges, a balance was struck, and a considerable amount ascertained to their satisfaction to be in favor of the student. That balance, however, was not to be for the benefit of the student exclusively, but the balance in favor of each student was together to form a fund to be appropriated to assist in paying the President and Professors in the college;—it being the aim to afford to any poor young man the means of obtaining acollegiate education, without one cent of money, save that which was earned by his own industry. That object attained, it was thought to be proper to appropriate all his surplus earnings to the payment of the salaries of the officers of the institution. By doing so, they would be able to procure the services of men of the best talents in the country, which would be for the common good of all connected with the institution. It was thought, moreover, that the students laboring on the farm, would prevent injury to their health from study and a sedentary life, and add to the vigor both of body and mind.

The plan appeared to be benevolent and plausible, and the friends of education became elated with the prospect of having a college in their midst, established with but little expense, because of the cheapness of the lands on which it was located, and conducted on a plan of industry and economy, which would as effectually impart to the poor orphan young men of the nation who might choose to avail themselves of its privileges, a classical education—as the proudest college in the land—though the favored recipient of princely munificence.

Under these humble, yet promising auspices, was Marion College ushered into being, as a candidate for literary distinction. As a matter of course, Dr. Nelson was by common consent elected its first President, and a Board of Trustees appointed for its control and superintendance. The friends of education, to the extent of their ability, contributed in small sums, to aid it in starting upon its anticipated career of usefulness—and it was determined by the Board of Trustees to make an appeal to the liberality and philanthropy of the friends of the church and of education in the Eastern States, and ask contributions from their ample means to place the

college on a firm and respectable basis—for this purpose some person or persons were to be sent to the East on a collection agency —and from the reputation Mr. Muldrow had acquired as a man of business and management, he was selected as the most suitable and efficient person to be charged with that mission. He had the unlimited confidence of the whole faculty, particularly of the President, Dr. Nelson, who remarked in reference to a serious attack of the small pox which Mr. Muldron had, that the Lord was preparing him to go through the world for the accomplishment of great good to the church. He accordingly visited New York, Philadelphia, and other cities in the East, highly recommended and commended to the friends of education. He was successful even beyond expectation in obtaining funds for the college, and made several tours east with the like success. But he was even more sucsessful in some other things. With his characteristic shrewdness and foresight, he had connected his own with the interests of the college. As he said himself, he wanted to *do* good and *get* good. We have no doubt of the sincerity of that remark, nor do we doubt that he sincerely desired to be useful to the cause of education, and to promote the spread of Christianity. But when by so doing, one's own private interest may be at the same time subserved, and in exact proportion with the interest of the church, because depending upon and growing out of it, it is quite natural that we should manifest a considerable amount of zeal in a good cause. We do not attach any criminality to the desire to promote our own interest in connection with the interest of any cause of benevolence —provided we do not thereby injure that cause, so long as our leading object is to do good, and we can accomplish that object without embarrassing it or prejudicing it by our own cupidity, we can see no impropriety in incidentally, but secondarily advancing our individual interest; the wrong and the danger is in inverting the order, and instead of acting with a single eye to the public good, or to the good of the cause of any benevolent and useful object in which we are engaged. If we make our own private interest the leading object, giving it the preference, and make the other cause the mere incident, or use it merely as a necessary instrument to advance our own private purposes, then our motives become criminal.

We have spoken of the *danger* of such a course. We by no means intimate that Mr. Muldrow alone is obnoxious to that charge; we speak of it in general terms, as a characteristic trait in

man's fallen, vitiated and corrupt nature—that self-interest is in almost every instance, sure to mingle in too great proportion, in all the actions and affairs of life. It is the ruling motive alike of all men, though in some repressed and more properly controlled than in others. It is the all pervading foible that has its secret home in the bosom of all mankind. Other vices of bold and daring front and frightful mien, may be seen, combatted, overcome, shunned or avoided, but this one of self-interest, having its native home within the human heart, deeply concealed and hidden beneath the labyrinthian folds, and deep recesses of that deceitful organ, and closely interwoven with every fibre of our being—indeed making a part of that being—insidiously and unseen even by ourselves, works its way into and exercises an improper influence in all the affairs of life. And having gained possession of the citadel of man's moral or *im*moral nature, defies all our efforts at dislodgement—because screened, concealed and defended by its associate, self-love, whose powerful pleadings and eloquent advocacy is almost sure to succeed in procuring a verdict in its favor.

[To be continued.]

Article IV.

Review.—By Mann Butler.

COTTON IS KING: OR THE CULTURE OF COTTON AND ITS RELATIONS TO AGRICULTURE, MANUFACTURES AND COMMERCE, TO THE FREE COLORED PEOPLE AND THOSE WHO HOLD THAT SLAVERY IS IN ITSELF SINFUL. *By an American.* Cincinnati, 1855.

This is a work, tho' under a coquetish title, worthy of the most serious attention of every patriotic American, whether north or south of Mason and Dixon's line. It is at once cogent, well-informed and temperate. While it must delight every friend to the continued glory and happiness of this aspiring republic, it need not offend the most determined abolitionist. What then are its merits, the reader naturally exclaims? They consist in the following propositions, which are fortified by authentic evidence and sound temperate argument:

1. The utter failure of the free colored race in the non-slaveholding States, to confirm the hopes of their white friends, by improved morality and industry.

2. The insuperable aversion of the free colored race to labor in the articles of slave labor most demanded by the markets of the world, as cotton, rice, sugar and tobacco.

3. The stubborn resistance to emigrate to a purely African and civilized state, as Liberia, encouraged, too, by mistaken friends.

4. The vast ramifications of the products of slave labor with the agriculture, the mechanic arts, the manufactures and the commerce of the United States as well as those of the civilized world.

5. The participation and even its encouragement by the friends of the colored race, *our amis des noirs*, and even the free negroes themselves, in African slavery, by freely and eagerly consuming the products of slave labor, on which slavery subsists, and by which it lives.

6. That slavery is a great civil and social evil identical in principle with *despotism;* but which is to be tempered by mercy and religion, till, like the other evils of human life, it can be abolished without endangering the civilization of society.

1. The utter failure of the free colored race in the non-slaveholding States to confirm the hopes of their white friends by improved virtue and industry.

It ought not to be forgotten in viewing the progress of a race considered and treated as an inferior and degraded one, that they can not be expected to feel a full social impulse to exertion and forbearance; the same degree of improvement ought not to be expected of them in the absence of the most influential incentives to human effort. But while admitting this extenuation, will it cover or defend the social delinquency of the free colored race in the non-slaveholding States?

The first fact which presents itself to the notice of every good citizen and every lover of orderly and prosperous society, is that after forty-seven years after Pennsylvania abolished slavery within her limits," which was in 1780, "*one third* of the convicts in her penitentiary were colored men; while few of the other free States were more fortunate; and some of them even worse—one half of New Jersey's convicts being colored men."* While this was the ratio of colored to white criminals, that of the white population of Pennsylvania to its colored was, in 1830, as 1,112,784 to 38,435; that is more than 25 to 1. The same comparison of the two kinds

* Boston Prison Discipline Reports, 1826-1827.

of population in New Jersey gives 299,590 whites to 18,283 colored people, or more than 15 to 1. At these ratios, the colored criminals in Pennsylvania should have been $\frac{1}{25}$ of the whole, while it actually amounted to $\frac{1}{3}$; and in New Jersey the colored criminals should have been $\frac{1}{15}$ of the whole criminal population, while it actually was $\frac{1}{2}$. The actual degradation and inferiority of the African negro race, not the Abyssinian, not the Egyptian, not the Moorish race of northern Africa, for these are well established different species of men, but the genuine Negro race, is a melancholy fact, authenticated by its earliest memorials. The continued barbarism and the abject slavery of this race at home, its notorious sale to all the slave buyers of the world, possibly to the ancient Egyptians; but certainly from the time of Las Casas to the present, are pregnant proofs of degraded nature. This is not said to discourage attempts at the improvement of this unfortunate race; but rather to stimulate its friends to wiser and more energetic efforts. But what observer of the world around him can avoid asking the question, how comes the Negro race so long subject to slavery and sale as inanimate merchandize, while other races of mankind have redeemed themselves from this condition, in some degree, more or less? This truth is exemplified in the condition of those who were the serfs of ancient Europe, and the northern regions of that part of the world in modern times? Why is the Negro more subservient to slavery than any other race of man? His resistance to improvement among a superior and dominant race might be admitted without precluding him from the hope of amelioration under more propitious circumstances.

The actual degradation of the free negro, below the standard of civilization around him, is a fact that can not safely be denied in the United States, in Canada, or the West Indies. Even in the free dominion of the North, (possibly an unfavorable climate for the development of the negro,) he withstands the example all around him, and vegetates in poverty and misery.

Were the negro not thus averse to order and industry among the free whites, why have the free States of the Northwest, Ohio, Illinois and Indiana obstructed their settlement among them so pertinaciously? This, too, in a market under so stocked with laborers? They can not feel the apprehension, which the slaveholding States may well entertain, of their corrupting and seducing their slaves; and still they all, and I believe some of the Eastern States,

act on the policy of excluding the free negroes from among them. Nor have any of the most rabid advocates of negro freedom relaxed their laws for the admission of negros in the halls of legislation; and but most partially, and hardly as an act of society, have they admitted the black race into family alliance by marriage with the white.

The testimony to this obstinate degradation is confirmed by the report of missionaries and travellers of most undoubted veracity, and likewise of the friends to the negro in the non-slaveholding States. I will begin with the last; it is a letter from the Hon. Gerritt Smith to Governor Hunt, of New York. It is dated in 1852; and after "speaking of his ineffectual efforts to prevail, upon the free colored people to betake themselves to mechanical and agricultural pursuits, says: Suppose, moreover, that during all these fifteen years, they had been quitting the cities where the *mass of them rot both physically and morally*, and had gone into the country to become farmers and mechanics." Again, in the same letter he says, "I do not say that the colored people are more debased than white people would be, if persecuted, oppressed and outraged as are the colored people. But I do say, that they are debased, deeply debased; and that to recover themselves, they must become heroes, self-denying heroes, capable of achieving a great moral victory—a two-fold victory over themselves and a victory over their enemies."*

Such is the condition of the free colored race in the non-slaveholding States.

Nor is their condition better in Canada; of four stations under the care of the abolitionists, at the opening of 1853, but one school remained. The missionaries formally asked the parent society to be released, because say they, "of the opposition to white missionaries, manifested by the colored people of Canada;" "and the interested misrepresentations of ignorant colored men pretending to be ministers of the gospel." For these reasons they say, that the funds of the association could be better employed *elsewhere*."†

In the West Indies, the account is still worse. The American and Foreign Anti-Slavery Society, for 1853, say that the friends of emancipation have been disappointed in some respects at the

* Idem, 146.
† Idem, 134.

results in the West Indies, because they expected too much. A nation of slaves can not at once be converted into a nation of intelligent, industrious and moral freemen." "Licentiousness prevails to a most alarming extent among the people. The almost universal prevalence of intemperance is another source of the moral darkness and degradation of the people. The great mass among all classes of the inhabitants, from the Governor in his palace to the peasant in his hut, from the bishop in his gown to the beggar in his rags—are all slaves to their cups."*

Mr. Bigelow, of the *New York Evening News*, after spending a winter in Jamaica, for the very purpose of observing the condition of things, mentions the enormous quantity of lands thrown out of cultivation since 1848, says, "This decline has been going on from year to year, daily becoming more alarming, until at length the island has reached what would appear to be the last profound of distress and misery;" "thousands of people do not know when they rise in the morning, whence or in what manner they are to procure bread for the day."†

Gov. Wood, of Ohio, on his way to Valparaiso, in 1853, stopped at Kingston, in Jamaica, and thus describes what he witnessed, "We saw many plantations, the buildings dilapidated, fields of sugarcane half-worked and apparently poor, and nothing but that which will grow without the labor of man, appeared luxuriant and flourishing. The island itself is of great fertility, one of the best of the Antilles; but all the large estates upon it are fast going to ruin. In the harbor were not a dozen ships of all nations—no business was doing, and everything you heard spoken was in the language of complaint. Since the blacks have been liberated, they have become indolent, insolent, degraded and dishonest. They are a rude beastly set of vagabonds, lying naked about the streets, as filthy as the Hottentots, and I believe worse."‡ Again, Bishop *Kip*, on his passage to California, in 1853, also stopped at the same Jamaica port, and declares that "the streets are crowded with the most wretched looking negroes to be seen on the surface of the earth. Lazy, shiftless and diseased, they will not work since the manumission act has freed them. Even *coaling* the steamer is done by *women*. About a hundred march on board in a line

* Idem, 139.
† Idem, 141.
‡ Idem, 142.

with tubs on their heads, (tubs and coal together weighing about 90 pounds,) and with a wild song empty them into the hold. The men work a day, and live on it a week. The depth to which the negro population has sunk, is we are told, indescribable."* This testimony might be confirmed by other authorities, indeed by every traveller to the non-slaveholding islands in the West Indies, or proprietor in those oppressed and harassed colonies of European masters and foreign legislators. It is most amply corroborated by Mr. *Barton Premium*, in his "Eight years in British Guiana, from 1840 to 1848 inclusive."† Laborers deteriorating season after season, year after year; wages rising, and fields turning out of cultivation for want of laborers and sufficient work. Expenses of cultivation accumulating on the planter.

A planter who made 700 hogsheads, assured the author that it took his whole crop of sugar to pay the expense of his plantation, and he had only his sum clear."‡ "There might be," he says, "nearly a score of such plantations out of 200 left in the colony. Of the rest, "there is not one that affords a revenue." "Estates sold in 1849 fetched fifty per cent. below those of 1840." "One estate which was sold in 1839 for £20,000, was now (1856) sold for £8,000." These are but specimens of wholesalu ruin, diminution of product and depreciation of property throughout the province of Guiana, under the rule of a British queen and parliament.

And shall our countrymen labor to bring on a similar state of ruin and desolation on their own fellow countrymen? men of their own race, to favor a foreign one, of most intractable and stubborn and low dispositions? Shall the free white men of the United States struggle against the peace and happiness of their own fellow white men, to bestow freedom on a race, which will not enjoy that freedom; but will abuse it, as all experience with them in our own bosom proves? Shall the black man be freed by the ruin of his white brethren, to brutalize the negro still more deeply?

To be continued.

* Idem. 142, 143.

† London, 1850. De Bow's Review, Ap., No. 1855 and sequel.

‡ De Bow, Ap. No. 491.

ARTICLE V.

Subsoil Ploughing.

By Hon. A. BEATTY, of Ky.

The practice of subsoil ploughing has hitherto been but slowly introduced. If the farmers of our country were well informed as to the great benefits which would result from the general introduction of this practice, there is reason to believe it would soon become almost universal in all situations adapted to this recent improvement in agriculture.

The object of subsoil ploughing is to pulverise the earth to a considerable depth beneath the surface, say ten or twelve inches. The chief advantage arising from this deepening and pulverising the soil is to prevent the loss of the various fertilizing ingredients contained in the rains that fall upon the earth. If rains fall upon hard soil, ever so little inclining, nearly all will run off. If the soil be ploughed to the depth of only three or four inches, a larger proportion of moisture will be absorbed; but if these fall rapidly, the few inches of pulverized soil will soon become saturated, and the surplus will be drained off and carried into the creeks and rivers, and thus be entirely lost. If the soil is pulverised by subsoil ploughing, its capacity and fitness for absorbing moisture will be greatly increased, and thus nearly all the rain that falls, with the fertilizing ingredients contained therein, will be preserved for the use of the growing crops. The fertilizing ingredients contained in the falling rain, will penetrate not only to the depth of the pulverized soil, but by absorption will gradually penetrate to a great depth. In time of drought, this moisture will again, by absorption, be brought back to the loosened soil, pulverised by the subsoil plough. As the roots of all growing crops can readily penetrate soil that has been well pulverized, they will thus be supplied with the necessary fertilizing ingredients, not only from the occasional rains that may fall during their growth, but also by the moisture absorbed from the hard soil beneath.

When we reflect that it is from rain water a very large proportion of the food of plants is derived, it will be perceived, at once, how important it is that farmers should, by all practicable means, preserve for future use all the rain which falls upon their cultivated grounds.

The quantity of fertilizing ingredients, contained in rain water, is very great. M. Barral, of Paris, has made some very useful experiments on this subject, from which it has been estimated that there *annually* falls, in Great Britain, in rain water, 400,000 tons of amonia; 1,850,000 tons of nitric acid; 279,000 tons of chlorine; 640,000 tons of lime; 240,000 tons of magnesia—altogether 3,409,000 tons. All these are very valuable ingredients in furnishing food for plants and growing crops of all kinds. Beside these, growing crops require a small supply of alkali such as potash and soda. These ingredients are not supplied by the rains that fall upon our soil; but as they cannot be carried off by evaporation, they can in a great degree be given back to the soil in the shape of straw, cornstalks, ashes and manures of all kind; clovering land, feeding stock thereon, &c. The alkalis are extremely important to growing crops, (some requiring more and some less) so much so that without a due proportion of alkali a soil, amply supplied with the fertilizing ingredients before mentioned, would be perfectly barren. It is immensely important, therefore, that our crops should have a full supply of alkali. Subsoil ploughing is greatly beneficial in this respect, as it enables the roots of growing crops to penetrate to a considerable depth, and thus draw a supply of alkali from the store house in which it is laid up in considerable quantities.

If nearly three and a half millions of tons of fertilizing ingredients are *annually* supplied to Great Britain, the supply to our great country (supposing only a proportionate quantity of rain to fall in the United States,) would be immensely great. In our present mode of cultivation two thirds, probably more, of those valuable ingredients are wholly lost. During the last summer, in consequence of the small quantity of rain which fell, after the 1st of July, our crops of corn, in many parts of the country, were nearly ruined. They were litterally *starved* for the want of subsistence or food. If by subsoil ploughing our abundant rains, in April, May and June, had been enabled to penetrate our rich soil, and thus preserved for supplying our growing crops, in July and August, we should have heard no complaints of an almost total failure of the corn crop.

It is just as necessary that our growing corn should have a supply of food as that our horses and mules should have their regular supply.

As we can not depend certainly upon a sufficient fall of rain in the months of July and August, to furnish food for our crops of corn, hemp, potatoes, &c., we should guard against a possible deficiency by laying up a sufficient stock of that which is so liberally furnished in April, May and June by a bountiful Creator.

Other advantages, resulting from subsoil ploughing, might be enumerated, but those suggested above are abundantly sufficient to recommend the general adoption of this practice by agriculturists.

July 5th, 1855.

ARTICLE VI.

From the American Phrenological Journal.

A New, Very Cheap and Durable Mode of Building.

Nature makes ample provision for supplying every want of her creatures. The demand for a HOME is a primary, and one of the paramount requisitions of every living thing; and the higher the creature the more imperious this demand. Of course, mother nature, in her ample supply of all the necessities of her children, has by no means omitted to supply ALL MANKIND amply with the materials for constructing themselves good houses: while phrenology points out, in its discovery of the CONSTRUCTIVE INSTINCT, an ample provision for manufacturing these materials into comfortable dwellings. To what, then, does nature point as her leading material for the structure of buildings, both for household and other purposes?

Not to wood: because her economy is to crowd upon the earth's surface just so many human beings as she can possibly feed, whereas, to appropriate so much land to the growth of timber, as will, in all coming time, be requisite for building purposes, would curtail the number of human beings, for the more land there is appropriated to timber, the less food can be raised.

Besides, timber is perishable, so that it will take a great amount of land merely to repair and rebuild dilapidated structures, to say nothing of creating new ones.

If it is objected that our timber grows on wild land, not needed for agriculturol purposes, I reply this is true now, but will not be a hundred, or certainly a thousand years hence: for by that time existing woodlands will all be cut off, and also wanted for agricultural purposes, for whatever land will grow building timber, will raise edibles.

Nor is it the order of nature that a house should be every day rolling down over our heads, nor need repairing every few years.

Nature has, undoubtedly, in providing for this home instinct, created some imperishable building material, and indestructable by fire. Wood cannot, therefore, be her primary provision.

Brick is better, yet is liable to many objections. It is too dear. Poor people can not afford to build with it. Besides, it takes a regular mason to lay them, whereas nature has obviously provided for every man to build his own house, just as much as to rear his own fruit, food, &c., eat, breathe, exercise, &c., for himself, and after his own fashion.

Clay, sun-dried, in large square blocks, is doubtless one of nature's building materials, but of this it is not our present purpose to speak.

Lime is obviously one of nature's first provisions for building. Cheap, abounding almost everywhere, various in quality, such as water lime of various kinds, &c., indestructible by fire, water, or frost, growing harder with age, and possessing extraordinary cohesive power, together with many other valuable properties, who can doubt that it should enter largely into building materials? And so it does. Yet I opine far less than nature designs it should. Mixed with sand it makes mortar which becomes nearly as hard as brick, or even stone, and the older the harder, and the coarser the sand used, the stronger the mortar. Yet it is used mainly to put together brick, stone, &c. But why not use mortar alone, and run it into such shapes as suits our liking? Why not use coarse gravel, and even pebble stones, just as we now use sand, mix them with lime, and put this gravel mortar into our walls, and even compose our walls, outside and in, of this material? It is solid, indestructible by fire, frost and water, lasts for ages, is "cheap," easily made, can be put up by any one, and be run into whatever shape we like. Can there, then, be a reasonable doubt that this is, after all, nature's great building material? Everything about it says, "This is juit the thing."

And recent experience confirms this verdict. J. Goodrich, of Milton, Wisconsin, formerly of Alleghany county, N. Y., living on a prairie, and thinking that nature had provided other building material where timber is thus scarce, knowing that under the prairie soil and subsoil, which is about three feet deep, there was coarse, clean gravel, and often gravel banks, and also, that lime abounded throughout the West, reasoned with himself thus, "Why will not this coarse gravel and lime make good walls?" and reduced the reasoning to a practical trial. I have seen him and examined this mode of structure thoroughly, and pronounce it, in my judgment, every way better than either brick or wood, and yet not one-fourth as expensive. The principal expense consists in drawing the materials and lifting the mortar into the walls. Sand abounds almost everywhere, and can be got—especially coarse gravel—for nothing; and lime is cheap, say twelve to fifteen cents per bushel, unslacked. In this way, one bushel of lime serves for twenty bushels of

gravel, so that 100 bushels of lime will put up 2,100 bushels of mortar, or some 2,500 cubic feet of wall, which, supposing your wall is one foot thick—enough doubtless for all practical purposes—would build the outside wall of a house thirty feet square and twenty feet high; and if the inside walls were eight inches thick, and run through the house each way, one to form the entry and the other to divide the house into front and back rooms, it would take only about thirty bushels more, or 130 bushels in all, at a cost of less than twenty dollars! And how many days' work is it likely to require to slack this lime and shovel the gravel into it, and stir up the two together—for no working is needed, only mixing—and carry it up into the walls? There are about 3,300 cubic feet of mortar. Cannot a man mix and carry up, on an average, one hundred cubic feet per day? I should think he could double this, yet at this rate the naked walls would cost thirty three dollars for labor—and the commonest laborer can do it—supposing labor to be one dollar per day; and say, perhaps seventeen dollars for lime, are only fifty dollars. The chimneys can be carried up in the wall, as is now done in brick walls, and with trifling additional labor, and with no additional cost of brick and mortar. The walls of a good sized dwelling-house were put up in Elgin, Ill., last year, for about forty dollars, as I was informed by Mr. Quigley, who was then building a church in that place.

"But will it stand?" ask many, half convinced that there may be something in this mode. Milton Academy, the first building put up in this way, has now stood, without anything on the outside of it, some six years; and not only without the least sign of decay, but becomes harder and stronger every year, which is known to be true of all good mortar. I examined the second building put up in this way—a blacksmith shop—with the following result: Finding a flint pebble stone—one of the hardest kinds of stone—of the size of a turkey's egg, which came out of the outer edge of the wall, I took a hammer and flaked off piece after piece, till I had clipped away two thirds of the stone, meanwhile the balance retained its position unmoved! I then drew my hammer—and it was a heavy one—repeatedly, as hard as I could upon the wall, making scarcely more indention than upon a stone; so I was compelled to regard the walls as even more solid than brick. Mr. Goodrich said that for six cents per blow he would let a man pound with a sledge upon his parlor walls, and let any one bang away on his blacksmith shop till they were tired, and added that many had done so. Readers will remember that I am stating what I myself saw and know to be true. So certain am I of success, that though my timber was ordered for the house of my life, to be built nearly on the principle mentioned in my "Home for All," yet I consider this so much cheaper and better that I have countermanded the order except for the floor timbers, and by the time this article will

be read, shall be putting up my walls of lime, sand and broken up slate stones, after the plan developed in this article.

In travelling through Illinois, Wisconsin and Michigan, I saw probably one hundred houses and some fences—for this is doubtless the best and cheapest mode of fencing prairies—built in this way, and properly put up, they look well enough from the road, without anything put upon the outside, but, finished off with a coat of lime and sand, which can be marbled and colored, they look splendidly—far better than either wood or brick. Yet, this marbleing and coloring can be done after the structure is completed, as well as at first.

Some of the houses I saw were cracked, of course because the foundation was defective, and brick or stone will crack under like circumstances. That these cracks were not necessary to this mode of structure is evident, because only two or three of those I examined were thus affected. One part of the foundation having settled, of course no alternative remained but to crack. Yet such cracks do less damage than in brick houses, and are easily covered up, and can do no real injury to the strength of the edifice. The partition walls, it must be observed, go up at the same time, and tie the whole building together.

By this process no lathing is needed, except overhead, for the plastering is slapped upon the wall inside and out. Yet as these walls are conductors of both heat and cold, as well as moisture, the outside walls should be carried up with an open space within them, for dead air, or else be furrowed, lathed, and plastered inside: yet this is a detail to which the mason can attend as he likes.

Below is an account from Mr. Goodrich himself, its inventor. After I have tried it, I shall give you the result in a future number of the Journal.

Gravel or Cement Building.—The following statement of the method and cost of constructing buildings of cement, has been kindly furnished us by Mr. J. Goodrich, who has had considerable experience in the business, being the builder and proprietor of the greater portion of the beautiful village of Milton, situated at the head of the Prairie du Lac, in Rock county, Wisconsin. The success he has met with is known to many of our readers who have visited that section of the country, as he already has several fine dwellings, a tavern house, a large block of stores, an academy, and various other buildings completed, presenting a very pleasing appearance from their neat exterior, and giving the amplest evidence of the utility of cement in the construction of buildings of all classes:

"My buildings are made of clear, coarse gravel and common quick lime. I use twelve parts of the former to one of the latter; but if the former is free from dirt, soil, or clay, and the lime well-burned or fresh, you can not hit amiss, for it will cement in any proportion from one part of lime to one of gravel, to one part of lime to twenty parts of gravel. I prefer laying the foundation with

stone laid in mortar, the same as for a brick house. The gravel walls are made of any thickness, according to the size and height of the house to be built. I have made the walls from ten to fifteen inches thick in my buildings. For curbing we use pine plank, straight grained, one and a half inches thick, and twelve inches wide, and have enough to curb all the walls around the building at once. The planks are held up by narrow strips of boards, set up endways and tacked with a nail to the plank at or near each end. The planks are held together by clamps made of pieces of scantling some two feet long, with strong pins put in far enough apart to include the thickness of the wall, and also the two curbing planks. These clamps are hung over the top edges of the planks, and said pins hang down on each side to hold them together, while a small stick, as long as the wall is thick, is placed between the planks and immediately under the clamps, to hold the upper part of the planks apart. As the wall rises the lower edge of the planks lap on the former layers, so as to keep the bottom right. We use a plumb which is indispensibly necessary, to carry up the wall true. The window frames and door frames ought to be as wide as the wall is thick, and about three inches thick, framed together, grooved and planed on the face side to let in the stoppers to hold the sash and tabbeted. For the doors to shut in they need no casing, which lessens the cost of finish very much. The joists are put into the wall the same as brick walls, hence you need no post, sills or beams. I make flat roofs, so as to not need any plates or rafters, barely letting the joists give a pitch of half inch to the foot, which is sufficient to cause the water to run off. I nail on to these joists straight-edged pine boards, and plaster on two inches thick of gravel mortar, so as to make it fire proof. Then on the top of this, as soon as it becomes dry a coat of tar; then sift on sand, which makes it hard as it settles into the tar; then another coat likewise, and if it leaks, several coats of tar and sand until it is water tight. This soon becomes very hard and solid, and it is cheaper than any covering I have yet found, and apparently durable. I carry up the wall still higher than the roof, so as to carry a balustrade in any shape that taste may dictate. These walls are rough and uninviting to the eye, but can easily be made smooth and level by plastering on a coat of coarse sand and lime, say one of the latter to eight of the former and floated on to level up. Then a fine coat, say half lime and half sand, put on with the trowel and brush, which makes a hard finish for both outside and in. Then whitewash two or three coats, with fresh lime, and you have a beautiful white finish which is both imposing and inviting to the eye.

"The cost of these walls will be about one-third of the cost of brick; say from five to six cents per cubic foot, before they are plastered, including labor and material, board, &c., and they may be put up by any common laborer, if he can make the wall straight

and plumb. If they are built in the early part of the season, and of good material, they are sure to stand; but they do not become hard like stone at once. This hardening process is slow but sure. The carbonic acid which is first driven off from the lime, by the burning in the kiln, returns through the atmosphere in the same quantity, and re-unites with the lime in the wall, and this converts the lime into stone again; and as the gravel is stone, it of course all becomes stone or rock and will be as durable as time. In fact, you can break the pebbles of gravel with a hammer before it will loosen them from the walls."—*Freeport Journal.*

The Gravel Wall Mode of Building.—As our article on this mode of building, in a former number, awakened considerable interest, and as we have made some personal experiments touching it, it is due to the readers of this volume to give them a few of the results of our own experience in this matter. At first, as to the solidity of the structure. We find it altogether stronger and more applicable to building than brick walls. Having occasion to tear down a portion of one of our walls which had been put up some six weeks, we found it far more difficult to do so than to tear down a brick wall which had been built nearly a year, although the mortar had hardly began to attain its ultimate adhesiveness and solidity. The wall in question was also only eight inches thick, which is of course the thinnest wall that can be made of brick; and in general we would pronounce eight inches abundantly thick for an inside wall of any house unless its size was truly enormous, designed for domestic purposes, and deem one foot abundantly sufficient for the outside walls.

Secondly, as to the materials. Our own house was built upon a knoll or eminence formed of slate rock, some portions of which had to be dug away to the depth of from one to six feet. Of course a large amount of this slate rubbish was thrown up, and different from the method laid down in the former article, we employed this slate rubbish in place of sand, and out of this formed a great part of our walls. Our mode of procedure was this: first taking three barrels of unslacked lime and wetting and slacking it and by water reducing it to a thin and cream like consistency, we added fifteen barrels of sand, though these barrels were hardly as large as those of the lime, and added sufficient water to allow the whole to mix or temper easily. After such tempering, beginning at one side of the bed, we would throw on a barrel of this slate rubbish, then a shovel or two of this lime and sand, then another barrel of rubbish, and another two or three shovels of this mortar, until we had put on thirty-five or forty barrels of the rubbish; then beginning at the end of the mortar-bed where we left off, one man would wet and shovel over these materials until they were well intermixed, and throw them into a wheelbarrow, from whence they were wheeled to the walls and, if not too high, thrown directly into the boxes; and,

if too high for that, would be shoveled into a small mortar-bed, say four by eight feet, on legs, thus raising it from six to eight feet, and from this shoveled into the boxes, constituting a layer on the walls. Of course every time it was shoveled only still further tempered or mixed these materials and made them the better, and while the bed was being thrown into the boxes, from twenty to thirty barrels of large stones were thrown in along with it, thus making some eighty or ninety barrels of stones, rubbish and sand for three barrels of lime, or about thirty to one, and this my own experience regards as abundantly sufficient; at all events I am willing to put my walls, for solidity, in contrast with any I have ever seen constructed of wood, stone or brick. It is really surprising to see how tightly those slate stones are bound, even where only a small portion of them is attached to the wall. Of course the whole strength of the wall depends on the lime. At first I employed a greater quantity of lime, relatively, than mentioned above, but I made up my beds in the proportion above stated and deem the lime abundantly sufficient; at the same time that I acted partially upon the advice of many of my friends, I erred on the side of too much lime rather than too little. I should add, that as this slate rubbish was shoveled up on the floor preparatory to be thrown into the beds, one man stood upon the pile with a light sledge hammer pounding it in order to save sand. What is required is that there be a regular gradation from finer particles to coarse ones, and so up to stones as large as can well be inclosed in the boxes. It is obvious that the amount of sand and also of lime should be made in proportion to the fineness or coarseness of the materials employed, or thus, suppose a quart of fine sand is to be fitted for a wall, all the particles of this sand must be coated with lime in order to give that adhesive power, but suppose a stone the same bulk is to be fitted for a wall, it has only to be coated, so that it requires the merest particle of lime, compared with the same bulk of sand, therefore in as much as our materials were so largely composed of slate stones less lime was requisite. In frequent instances, these flat slate stones, wide but thin, as they were thrown promiscuously into the boxes would form vacuums, but instead of injuring the wall, I considered this beneficial, because it furnishes a place for the plastering to fasten on, or even, if there should be occasional holes in the walls, what harm can result therefrom. We omitted to mention in the proper place a few facts touching the strength of our walls. On an eight inch wall before it had been finished two weeks, we placed a mortar bed into which were put one hundred and fifty barrels, each barrel containing nearly a bushel of this mortar and slate, together with several barrels of water, without any props underneath. Here then were several tons placed upon some ten feet of an eight inch green wall, a greater weight by many fold than would be placed upon it in the ordinary use of a house.

Upon a foot wall, we placed within three days after its completion, and it was completed in three days from being started, it being nine feet high, several tons of the slate rubbish, say from ten to fifteen, and before this wall had been completed a week, it was loaded so heavily that at least a dozen of the floor timbers broke off with the pressure and yet the wall remains perfectly solid. No wall of course needs stronger trial than this, for if so green a wall will bear so much, what will the same wall bear when fully consolidated, for it becomes harder and still harder for eighteen and even twenty years.

Thirdly, as to the expense of these walls. I cannot give those details on which my judgment is based, but that judgment is that they can be built five times as cheap as wood, and eight times as cheap as brick or stone. Almost the entire cost is labor, and after one has acquired sufficient experience to know how to work the mortar in those beds economically, it is perfectly surprising how much a given amount of labor will accomplish. This can be seen at once from the fact that it consists mainly in shoveling the coarsest materials, for it is shoveled into the mortar-beds, worked mainly by the shovel, and shoveled into the boxes, instead of being carried there in hods. A man will shovel to a given height a far greater amount of matter than he can carry on his back; or thus, suppose a given amount of mortar is to be shoveled twenty-one feet—a man can easily shovel seven feet—let him then shovel from the ground into a box, from that into another, and from that into a third, or let three men, one in each of these boxes, shovel this mortar twenty-one feet high, and see how much more easily they would accomplish it than to carry it by hods, for in the former case they have only the simple material to lift, and lift it very advantageously, while in the other case they are obliged to carry their bodies in addition every time they carry say fifty or eighty pounds of this material.

In the article already published it is stated that the main expense of the building was hauling sand; in my own case I have mainly overcome this difficulty by employing the materials dug out of my foundation in place of sand. Some of my neighbors facetiously called these piles of rubbish and slate intermixed with large stone and small, Fowler's brick. "Very well," I replied, "it makes a better wall than any other kind of brick, and at a tenth the cost. It looks rough now, but wait till my walls are finished, and you could not tell the difference between it and the best of brick in looks, and I will guarantee that it will be more solid."

In further aiding the reader to form an estimate of the labor required, I will add that five days' work put up a wall forty feet long, eight inches wide, and nine feet high, including the laying out of the wall, and the erection of the guides, and all but one fourth of a day of this work by hands employed at twelve dollars

per month; though it should be added that this was the wall torn down, moved a couple of feet so that the materials were handy, that is, these materials had only to be shoveled into a mortar-bed, some fresh lime added, and then shoveled back into the boxes.

(Valley Farmer.)

ARTICLE VII.

From Maj. Carleton's Journal of the Expedition to the Ruins of Abo, Quarra and Gran Quivira, N. Mexico.

TUESDAY, December 20, 1853.

As we knew it would be quite impossible to march to Gran Quivira and make the necessary observations there and back to the laguna in one day, it was decided to rest this forenoon, and to fill all the kegs and India rubber water tanks with water, and then to march to the ruins in the afternoon; to encamp near them to night, to employ the forenoon of to-morrow in their examination, and then to return to-morrow evening to this place. In this way our animals would not be without water more than a day and a half. We accordingly broke up our camp about half past twelve o'clock. After we had filled our kegs and tanks at the laguna, we ascended a high ridge for a mile or more, when our guide pointed out to us what he said was the great church, or cathedral, at Gran Quivira. It was an air line all of thirteen miles distant, and yet we could see it distinctly with the naked eye.

We could have seen it easily when five or six miles further off, had there been no obstruction to the view: a proof of the remarkable clearness of the atmosphere in this elevated region. It lies S. 5 deg. E. by the compass from Laguna de la Puerta, and served for a landmark towards which to direct our march. Our course was a very straight one; for the country, which is an open, rolling prairie, offered no impediment to our moving in a right line. The weather changed to be very cold during the afternoon, when near sunset a fierce wind arose from the direction of the snow-clad mountain in the west, and a cold vapor like a cloud came over the country, enveloping everything in a dense fog, and covering men and horses with a hoar-frost. It was feared that the gale would change into one of those dreadful winter northers which are sometimes experienced in this country, and which are so fatal to men and animals when exposed to their fury on the open prairie. So the direction of the march was changed that we might get the shelter of the timber of the slope of the Mesa de los Tumanes, which stretched along our right at a distance of not more than three or

four miles. This we struck very opportunely just as night was setting in. We soon had large fires blazing and all our horses well blanketed and picketed on the leeward side of them to get the benefit of the heated air and of the eddy in the wind from the long line of tents. In this way they were kept from suffering, although the night was uncommonly cold and inclement.

So, still another day has passed away, and the ruins not yet reached. Quivira would seem always to have been a difficult place to arrive at. We find in Castanada's history of the expedition into this country made by FRANCISCO VASQUES DE CORONADO, in 1540–'41 and '42, that that General was forty eight days in hunting for it, starting from some point between the Rio Grande and the Gila river. All the way from Albuquerque we have asked the people of the country were the ruins were situated? how they looked? who built them? &c. To all these questions we could seldom get a more definite reply than *quien sabe?* It seemed as if the genii who, in the Eastern tale at least, are said to guard the depositories of great treasures, were determined to make the existence of such a place as Gran Quivira as much of a problem to us as to the Mexicans themselves. We had seen before the fog set in an edifice in the distance which had seemed to move away as we approached it like the weird lakes of water in a mirage. But tomorrow at all events will decide for us whether that edifice be a Fata Morgana, or not.

WEDNESDAY, Dec. 21, 1853.

At daybreak this morning, every tree and spire of grass, and even the blankets upon our horses, were covered with ice. The trees seemed as if every twig was made of frosted silver. The wind had gone down, and overhead the sky was clear; but a heavy bank of fog extended all along the east, obstructing our view of the Sierra de las Gallinas, which bounds the horizon in that direction. It was long ere the approaching sun waded up through so dense a veil.

Soon after we left camp we again saw the Cathedral of Gran Quivira; but in surmounting one eminence after another, as we mooved along over a rolling country, the ruins, phantom like, seemed to recede before us the same as on yesterday. When we first saw them this morning, they appeared to be about a mile and a half distant, when in reality they were more than five miles off.

The last three of these five miles travel was over nothing but a succession of sand hills covered with a tall coarse grass with two or three heads on each stalk, which seemed to be peculiar to this place. The horses sank more than fetlock deep into the soft, yielding sand, while it was with great difficulty that the mules, at a snail's pace, drew the wagons along.

At eleven o'clock in the forenoon we came to the last high ridge, on the point of which the ruins are situated. This ridge is com-

posed of dark blue, compact limestone, which crops out in several places along its slopes. The ascent is quite abrupt on every hand except towards the east; the ridge is prolonged in that direction for several miles. We all felt rejoiced that, finally, we had reached a place about which so much had been written and so little had really been known.

Whatever may have been the grandeur and magnificence of this place in ages long past, its present appearance and condition are easily described.

We found the ruins of Gran Quivira to consist of a large church, or cathedral, with a monastery attached to it; a small church or chapel, and the ruins of a town extending nine hundred feet in a direction east and west, and three hundred feet north and south. All these buildings had been constructed of the dark blue limestone which is found in the vicinity.

The cathedral which we had seen from Laguna de la Puerta, is one hundred and forty feet long outside, with the walls nearly six feet in thickness. It stands longitudinally W. 15 deg. S., with the great entrance in the eastern end. The altar was in the western end. Like the churches at Abo and Quarra, it is constructed in the form of the cross. From the doorway at the foot of the cross to the transept, it is eighty-four feet seven inches; across the transept it is twenty-one feet six inches; and from thence to the head of the cross it is twenty-two feet seven inches; making the total length, inside, one hundred and twenty eight feet eight inches. The width of the nave is twenty seven feet; the length inside of the short arm of the cross is thirty-six feet. A gallery extended along the body of the cathedral for the first twenty-four feet. Some of the beams which sustained it and the remains of two of the pillars that stood along under the end of it which was nearest to the altar, are still here; the beams in a tolerably good state of preservation; the pillars very much decayed. They are of pine wood, and very elaborately carved. There is also what perhaps might be termed an entablature supporting each side of the gallery and deeply embedded in the main wall of the church. This is twenty-four feet long by say eighteen inches or two feet in width. It is carved very beautifully indeed, and exhibits not only great skill in the use of various kinds of tools, but exquisite taste on the part of the workmen in the construction of the figures. These beams and entablatures would be an ornament to any edifice, even at the present day.

We have cut one of the beams into three parts to take back with us. The entablatures are so deeply set in the walls we are unable to procure a piece of them. The beams are square and are carved on three sides; the floor of the gallery rested on the fourth side.

The stone of which the cathedral was built was not hewn nor even rughly dressed, but the smoothest side of each piece was laid to the surface with great care. We saw no one piece in all the ruins

which was over a foot in length. The mortar was made from the ordinary soil found on the spot. It affords but a poor cement to resist the action of the elements and the ordinary ravages of time.

The walls of the cathedral are now about thirty feet in height. It was estimated from the great quantity of stones which have fallen down, forming a sort of talus both with the walls and outside of them, that originally this building was all of fifty feet in height. There is a small room to the right as you enter the cathedral, and another room which is very large and which communicates with the main body of the building by a door at the left of the transept. There was also communication between this large room and the monastery or system of cloisters, which are attached to the cathedral. The chapel is one hundred and thirty feet from the cathedral. This building is one hundred and eighteen feet long, outside, and thirty two in width. Its walls are three feet eight inches in thickness. It is apparently in a better state of preservation than the cathedral, but yet none of the former wood work remains in it.

A short distance from the chapel there is an enclosure which we supposed was the ancient cemetery.

The remains of the town are but heaps of stones, with here and there some evidences of narrow streets running nearly east and west and north and south. Through these stones pieces of beams and sticks of wood are seen to project. These indicate by moss and otherwise, that they are of very great antiquity. They are bleached white by the weather and are deeply gnawed by the tooth of time.

We saw some deep pits which were circular and walled around like wells. We believed them to be the remains of cisterns; they were not deep enough for wells. Some have concluded they were *estuffas*. Two hundred and ninety feet north of the cathedral there are evident traces of an *estanque*. This, as well as the cisterns, was probably made to collect the rain water which ran from the different buildings.

Toward the east we saw a well defined road, which kept the ridge for a few hundred yards and then turned off toward the southeast, where all further vestiges of it are lost in the sand. Where it is the most plainly marked along the summit of the ridge some large cedar trees are growing directly in the middle of it. These trees look to be very old indeed.

In every direction about the ruins we found great quantities of broken pottery, many specimens of which we have collected to take to Albuquerque. Some of it is handsomely marked and well glazed. We also found several stones which were evidently once used as *matates*. These metates are in use to this day to rub boiled corn upon until it becomes a kind of dough suitable to be kneaded into cakes called *tortillas*. We have selected two which we shall take home with us. These proved to us that the ancient inhabitants of Gran Quivira knew the use of corn as an article of food.

There is no sign that the ground in the vicinity has ever been cultivated, and no mark whatever of irrigating ditches. Indeed, an acequia, or open aqueduct, could not, it is believed, have brought water to the Gran Quivira; for the point occupied by the town appears to be considerably higher than the surrounding country.

We were informed by men at Manzana who had been *pastores* in their youth, and had herded sheep in this region of country, that there is a fine, bold spring of water at the base of the Sierra de las Gallinas, about fifteen miles from the ruins; and that they had heard that water once ran in an aqueduct from that spring to the Gran Quivira. This could hardly have been possible unless the aqueduct was a closed pipe; because from appearances the country intervening between those two points is considerably lower than either of them.

We have no indications that there had ever been such an aqueduct, nor did we see any sign that wells had been digged in the neighborhood. From every feature of the country, both within and without the surrounding sand hills, we could but be lost in conjecture as to the method adopted by the inhabitants to obtain even water to drink, without taking into account any at all for purposes of irrigation, unless they were supplied by some spring or stream that has long since disappeared. The nearest point where water can always be obtained *now*, is the spring which the pastores spoke of as being at the base of the Sierra de las Gallinas, fifteen miles away. The Laguna de la Puerta is fourteen miles seven hundred and seventy-three yards from Gran Quivira in nearly a direct line; but this is said to become entirely dry in seasons of great drought.

As at Abo and Quarra, we were surprised at not finding in the cathedral and chapel some of the door ways and windows surmounted by an arch. Had they been so originally, these buildings would now be in a better state of preservation. The beams across windows and doors, in giving away to the weight above, as they became decayed, made a fair beginning towards letting down the whole superstructure.

Mr. GREGG, in speaking of the ancient ruins of New Mexico, says: "The most remarkable of these are *La Gran Quivira*. This appears to have been a considerable city, larger and richer by far than the capital of New Mexico has ever been. Many walls, particularly those of churches, still stand erect amid the desolation that surrounds them, as if their sacredness had been a shield against which Time dealt his blows in vain. The style of architecture is altogether superior to any thing at present to be found in New Mexico. What is more extraordinary still, is, that there is no water within less than some ten miles of the ruins; yet we find several stone cisterns, and remains of aqueducts, eight or ten miles in length, leading from the neighboring mountains, from whence water was no doubt conveyed. And as there seem to be no indications

whatever of the inhabitants having ever been engaged in agricultural pursuits, what could have induced the rearing of a city in such an arid, woodless plain as this, except the proximity of some valuable mine, it is difficult to imagine. From the peculiar character of the place, and the remains of cisterns still existing, the object of pursuit in this case would seem to have been a *placer*—a name applied to mines of gold dust intermingled with the earth. Other mines have no doubt been worked in the adjacent mountains, as many spacious pits are found, such as are usually dug in pursuit of ores of silver; and it is stated that in several places heaps of scoriae are found.

By some persons these ruins have been supposed to be the remains of an ancient Pueblo, or aboriginal city. This is not probable; for though the relics of aboriginal temples might possibly be mistaken for those of Catholic churches, yet it is not presumed that the Spanish coat-of-arms would be found sculptured and painted upon their facades, as is the case in more than one instance. The most rational accounts represent this to have been a wealthy Spanish city before the general massacre of 1680, in which calamity the inhabitants perished — all except one, as the story goes: and that their immense treasures were buried in the ruins. Some credulous adventurers have lately visited the spot in search of these long lost coffers, but as yet (1845) none have been found."

There is no indication that the escutcheon of Spain was ever sculptured or painted on any facade about the ruins; and the facts as regards the style of architecture and the remains of an aqueduct, do not, as is shown by this journal, agree with his statement. Mr. Gregg must have described the appearance of this place from what he heard about it; for on all those subjects of which he wrote from personal observation, he is most excellent authority.

Pedro de Castanada accompanied Francisco Vasquez de Coronado in his great expedition to the North in search of gold. He wrote a history of the campaign. General Vasquez de Coronada arrived in a country, which was called *Quivira*, in the month of June, 1542. If the present ruins of Gran Quivira are in a region identical with the Quivira then visited, it may be of interest to state what Castanada says of it and of its inhabitants:

"Up to that point the whole country is only one plain; at Quivira mountains begin to be perceived. From what was seen it appears to be a well peopled country. The plants and fruits greatly resemble those of Spain: plums, grapes, nuts, mulberries, rye, grass, oats, penneroyal, origanum, and flax, which the natives do not cultivate because they do not understand the use of it. Their manners and customs are the same as those of Tegas, and the villages resemble those of New Spain. The houses are round and have no walls; the stories are like lofts; the roofs are of straw. The inhabitants sleep under the roofs, and there they keep all they possess."

The manners and customs of the people of Tegas to which he likens those of the people of Quivira, are described as follows:

"These natives are called Querechos and Tegas. They live under tents of Buffalo skins tanned, and subsist by the chase of these animals. These Nomadic Indians are braver than those of the villages: they are taller and more inured to war. They have great troops of dogs which carry their baggage; they secure it on the backs of these animals by means of a girth and a little pack saddle. When the load becomes deranged, the dogs begin to bark to warn their master to adjust it. These Indians live on raw meat and drink blood; but they do not eat human flesh. Far from being evil they are very gentle, and very faithful in their friendship. They can make themselves very well understood by signs. They cut meat in very thin slices and dry it in the sun; they reduce it afterwards to a powder, to preserve it. A single handful thrown into a pot answers for a meal, for it expands greatly. They prepare it with the fat which they preserve when they kill a buffalo. They carry around the neck a great intestine filled with blood, which they drink when thirsty. If they open a buffalo, they squeeze the masticated grass which is found in the stomach, and drink the juice which runs out; they say that this is the whole substance of the belly. They open a buffalo at the back and divide it at the joints by means of a piece of pebble attached to the end of a stick with as much facility as if they used a knife of the best steel."

The present ruins are not the remains of the round houses with roofs of straw which CASTANADA describes as the dwellings of the inhabitants of Quivira, three hundred and twelve years ago, and if they had had in those days instruments to shape and carve those beautiful beams and pillars, and entablatures, they would hardly have used pebbles at the ends of sticks in cutting up the buffaloes which they had killed. Besides, the matates we have found are almost positive proof that the people who once resided here ate as food tortillas made of corn, while from CASTANADA'S account, one is obliged to believe that the inhabitants of the country which he calls Quivira, lived entirely upon the flesh of the buffalo, as the Camanches do at the present day.

CASTANADA says likewise, that "the Indians of the country had neither gold nor silver, and were not acquainted with the precious metals. The Cacique wore on his breast a plate of copper, which he held in the greatest esteem."

Many have supposed that the ancient Aztecs built the edifices Gran Quivira, Abo and Quarra during their migration from Aztlan towards Anahuac; that the ruins now found in the Navajo country, and the *Casas Grande*, which are still to be seen along the Gila river, were built by the same people, and at about the same period of time. Captain JOHNSTON, of the first dragoons, visited the ruins of the Gila river in November, 1846; from his description of one of the Casas Grande—the largest and best of any he saw—we can

discover no point of resemblance between it and these now before us. Captain JOHNSTON says: "After marching six miles, still passing plains which had once been occupied, we saw to our left the *Casa de Montezuma.* I rode to it, and found the remains of the walls of four buildings, and the piles of earth showing where many others had been. One of the buildings is still quite complete as a ruin. The others had all crumbled but a few pieces of low, broken wall. The large Casa was fifty feet by forty, and had been four stories high, but the floors and roof had long since been burnt out. The charred ends of the cedar joists were still in the wall. I examined them and found that they had not been cut with a steel instrument. The joists were round sticks. There were four entrances—north, south, east and west; the doors are about four feet by two. The rooms had the same arrangement on each story. There was no sign of a fire-place in the building. The lower story was filled with rubbish; and above, it was open to the sky. The walls were four feet thick at the bottom, and had a curved inclination toward the top. The house was built of a sort of white earth with pebbles, probably containing lime, which abounded on the ground adjacent—and the surface still remained firm, although it was evident they (the walls) had been exposed to great heat from the fire. Some of the rooms did not open to all the rest, but had a hole a foot in diameter to look through. In other places were smaller holes." CLAVIGERO, the historian, believes that this great movement of the Aztecs from the North towards the South commenced about the year of our Lord 1160, and that the Casas Grande were built by them at various halts which they made in their circuitous journey toward the Valley of Mexico. It has been shown that in 1542 there were no buildings of the size and character of the Casas Grande, or such as are found here now, in all the country called Quivira, which CASTANADA visited and described. So one must conclude that so far as the Aztecs were concerned, whatever they may have had to do with the building of the edifices either in the Navajo country or on the Gila, or those found 250 miles northwest of Chihuahua, they never planned or constructed these at Gran Quivira.

History represents that VASQUEZ DE CORONADA, finding no gold during his great expedition, returned to Mexico, where he fell into disgrace and died in obscurity.

The Spaniards did not return to colonize the province of New Mexico until the year 1581; and the country could not be considered as conquered until 1595. For eighty-five years after this the colony seems to have prospered and to have grown in power. Towns and villages were built, and valuable mines of gold and silver were found and worked with success. The Catholic clergy were aided in their efforts to convert the Indians to christianity by the government, at whose expense large churches were erected in different parts of the province of New Mexico, corresponding with the

missions which were built for the same purpose and at about the same period in the other provinces of Texas and California. It was during this time, doubtless, that the large edifices at Abo, Quarra and Gran Quivira were erected. It is more than probable that valuable mines of the precious metals were found in their vicinity, and worked under the direction of the Spaniards, by the Indians who had been subjugated; for there is every reason to believe that the mountains east of the Rio Grande are at this day rich in gold and silver.

It appears that during these eighty-five years the Spaniards treated the Indians with the most cruel oppression, until finally, the latter revolted against them. The night of the 13th of August, 1680, was the time set, throughout all New Mexico, when the Indians should rise and make an indiscriminate massacre of all the Spaniards in the country. This plot was made known to DON ANTONIO DE OTERMIN, then the governor and military commandant of the province, by two Indian chiefs. Every effort was made for defence and to avert the coming storm, but without success. The Indians rose as agreed upon, and after various conflicts, they destroyed great numbers of the inhabitants; and, finally, by the latter end of September of that year, succeeded in driving all the rest, with Governor OTERMIN included, to El Paso del Norte, entirely beyond the confines of the Territory.

We have been informed that there is now a tradition among the Indians, that as soon as their forefathers had become successful in expelling the Spaniards, they filled up and concealed all traces of the mines where they had toiled and suffered for so many years; declaring the penalty to be torture and death to any one who should again make known their locality.

Old Mr. CHAVIS, who overtook us soon after our arrival at Gran Quivira, informed Major CARLETON that he had been told when in his youth by very old people, that a tribe of Indians once lived here called the *Pueblos* of Quivira, that the Spanish priests came and lived among them in peace and security for twenty years; that during this period these large churches were erected, and that at the time of the great massacre, there were seventy priests and monks residing here, all of whom were butchered excepting two, who contrived to make their escape. That previous to their massacre the priests had had intimation of the approaching danger, and had not only buried the immense treasures which had been collected, but had concealed likewise the bells of the churches. That many years after the people of Quivira had died off until but few remained, that one of these, a descendant of the chief, knew where the treasures were buried; that the remnant of the tribe afterwards emigrated and joined other Pueblos below El Paso; and that many years ago an old man, one of the last of the tribe, had told in what direction from the church these great treasures had been concealed. So far as the building of the churches and the

massacre of the monks and priests are concerned in this account, as well as the final decrease and removal of the people who once lived here, there is no doubt but that the story told by Mr. CHARVIS is, in the main, correct. The account of the depositories of the bells and the treasure is said to have been written down as given from the lips of the last Cacique of the Quivira, who, at the time he made the disclosure, was living away below Mesilla on the Mexican side of the river. A copy of this paper has been secured and is here inserted in the original language, for the benefit of those who may take an interest in such matters:

"En el Semetario de la Parroquia grande en el ceretro del costado derecho segun la figera namero una esta una eutrana escarbando esta dos campanas tomando la linea de la abertura que dejan los dos campanas se bera al oriente para el callijou que deja la eglesia vieja y el pueblo una lomita a distancia de tres cientas varas mas o menos que no hay otra que forme henea con las campanas debajo de dicha loma hai un sotano de diez o mas varas retacado de piedras el cual tiene el gran tesoro.

Nembrado por Carlos quinto de la Gran Quivira."*

In the cemetery of the great church, according to figure number one, there is a pit, and by digging will be found two bells. By taking a narrow street, leading in an easterly direction from the old church and the town will be seen a hill, at the distance of three hundred varas, more or less, and there is no other which forms a line with the bells. On the side of said hill there is a pavement of ten yards or more, beneath which is the great treasure.

The grammar of this document is preserved as in the original. There can be no doubt but the belief that a large amount of gold and silver has been buried there, has for a number of years been seriously entertained. We find in the cathedral, and in the chapel, in every room in the monastery, in every mound of stones in the neighborhood, and in every direction about the ruins, large holes dug, in many places to the depth of ten feet, by those who have come from time to time to seek for these hidden treasures. Some of these holes look as if they were made more than a century ago, while others appear to be quite recent. Even the ashes of the dead have not been left undisturbed during these explorations. Near the east end of the chapel we saw where the people who had been digging had thrown up a great many human bones, which now lie scattered about. From these we have selected six skulls to send to some one who is skilled in the science of craniology, that he may determine, if possible, to what race of people they once belonged. These skulls are thought to be unusually large.

The Ruins of Gran Quivira have hitherto occupied the same position to the boundless prairies which the fabulous Island of Atlantis did to the ocean in days of antiquity. No one seemed to know

* Mentioned by Charles V., of Grand Quivira.

exactly where this city was situated. But the uncertainty of its locality seemed to make no difference in regard to the interest that was felt concerning it; for people would believe in its existence, and receive great pleasure in listening to traditions about its marvelous beauty and magnificence, even when to a reasonable mind those traditions ran counter to probability.

Men of genius and distinction have taken great pains in following up mazes in the labyrinth of reports concerning it, whether oral or written, and in their glowing descriptions it has appeared almost like a city of enchantment. To them it had paved streets, and fluted columns, and ornate friezes, and sculptured facades; it had the remains of aqueducts and fountains; it had long colonades and even barbaric statuary. It had the groined arch, the shouldering buttress, the quaint gargoyle; and everything in outline and in detail that could betoken skill, and taste, and opulence. It was a city they say whose inhabitants departed from it so long back in the gloom and mists of the past as to leave in utter obscurity all other records concerning them.

The Sphynx, they said, about whose bosom the sands from the Lybean desert had drifted for unknown centuries, was no more of an enigma than this was. Here were palaces, and temples, and deserted courts, and long echoing corridors, and desolate streets; and reigning over all a silence so profound as almost to be heard.

Historical Societies had taken up these descriptions, and filed them away amongst their transactions as documents of deep interest. Venerable and learned ethnologists searched in dusty manuscripts and black-latter volumes of antiquity for some authentic account of that race of men who reared and then abandoned such a city. But to this moment their researches have proved fruitless, and the story they seek is still recorded in an unsealed book!

Our business is not that which will permit us to clothe with imaginary grandeur these vesteges of a people whose name has been erased from the book of nations; nor that which will allow us time to indulge in abtruse speculations as to their race or their language. These things belong to the poet and philosopher. With all those pleasant reveries and romantic fancies which these ruins away here on a desert are so wonderfully calculated to awaken, we can have nothing to do. We came here to note realities; and now the facts we have seen, the theories we have read, which were of value, the traditions we have heard deserving of attention, and the conclusions to which we have come concerning this interesting place, are all written down. All else save the things we saw admits of doubt, and is obscured by so dark a cloud of uncertainty, as to leave much ground for new theories, and for, perhaps, infinitely more valuable conclusions.

From Gran Quivira the Northern point of the Sierra Blanca bears by the compass, S. 30 deg. E., and is distant about fifty

miles. The highest point of Sierra de la Gallinas bears E. 5 deg. N., and is distant about fifteen miles. The peaks known Las Tetillas bear N. 36 deg. W., and are distant about fifty-five miles.

JAMES HENRY CARLETON,
Brev. Major U. S. A. Com'g. Column.

ARTICLE VIII.

(From the United States Mining Journal.)

The Chemistry of Common Life.*

The common life of man is full of wonders, chemical and physiological. The manner and means of our existence, every necessary we consume, every material comfort we enjoy, all the parts and functions of the bodily organs through which we enjoy them, —everything, in short, which concerns our daily individual life, abounds in admirable marvels, which chemistry and chemical physiology disclose. Dr. Johnston has described and discussed these subjects, at once so familiar and so obscure, so universally felt, and so imperfectly understood, in one of the most agreeable and instructive publications of the present day. We shall follow him rapidly through the general divisions of his subjects, and terminate our observations by some of the examples which the Doctor draws from the habits and wants of our daily lives.

If we begin, for example, with that universal air which floats around us, which expands our lungs and permeates every tissue of our bodies—modern chemistry informs us that, though considered simple and elementary by the ancients, this air is a mixture of at least three elastic fluids, equally subtile and invisible, and equally essential to the purposes which the atmosphere is intended to serve. These are the now well-known gases, nitrogen, oxygen and carbonic acid. In the first, flame dies, and no life can persist; in the second, bodies burn and animals live with great intensity; in the third, both life and flame are extinguished. Though so different in their properties when taken singly, the admixture of them, which forms our atmosphere, is adjusted, in kind and in relative portions of each, to the condition of things both living and dead, which now obtains on the surface of the earth.

Did the air consist of nitrogen only, the sun's rays would be the sole source of heat wherever the atmosphere extended, and no ex-

* From the Edinburgh Review, April, 1855: Art. VII. By James F. W. Johnston, M. D., F. R. S. L. & E. Reader in Chemistry and Mineralogy in the University of Durham, 2 vols. post 8vo. Backwood: 1855.

isting plant or animal could flourish on the globe. Were it formed of oxygen only, fire once kindled, would refuse to be extinguished, and conflagration would spread, till everything combustible in the earth was consumed. Did it consist of carbonic acid only, death and comparative stillness would reign everywhere, and the production of light and heat such as we can now command, would be utterly impossible. But the happy mixture of the three gases which now prevails, renders everything possible. Under their united influence the rocks crumble to form a fertile soil, plants flourish to cover it with verdure, animals live to adorn and enjoy it, and light and heat are awakened or extinguished at will. The inactive nitrogen dilutes the too energetic oxygen, so as to make animal life longer, and to subject living fire to human control; while the poisonous carbonic acid is rendered harmless to animal life by the very small proportion in which it is mixed with the other airs.

One of the most admirable, indeed, of nature's wonders in the material world, is the purpose served by this carbonic acid gas. Itself poisonous in a high degree, it can be breathed by man with impunity only in very minute quantity; that is, in an extreme state of dilution. Hence, the atmosphere in which man lives contains only one gallon of this gas in every 2,500. And so small is this quantity, that the weight of carbon in this form which the whole atmosphere contains, amounts only to thirty three grains out of the fifteen pounds of air which press upon every square inch. Yet by this comparatively minute quantity all vegetable life is nourished and sustained.

Look out in the coming spring time at the bursting bud. Watch how beneath the mid-day sun, the tiny leaflet spreads out its yellow surface to the favoring rays. See how from day to day its hue becomes greener, and its several parts increase in size. This growth will continue till closing summer finds the little bud changed into a magnificent plant, clad with copious leaves, and successively blooming with gay flowers, or borne down by a burden of tempting fruit. Autumn will succeed, to stop the growth and give a new color to its leaves; and chill winter will strip it of all its leafy pride, and leave it naked as when spring time began.

Such is the yearly plant-life, as seen by the ordinary cultivator, or watched with daily care by the lover of vegetable nature. But, beneath this outer open life, there is an inner secret life which the common eye does not see. A constant invisible intercourse has all the time been taking place between the external air and the most hidden parts of the internal plant. No sooner does the little leaf burst the swelling bud, than a thousand unseen mouths open on its surface to suck in the airy food which now for the first time comes within their reach. These minute mouths (*stomata*) are scattered in millions over the leaf, now on its upper, now on its under side, and now on both, — according to the circumstances in which the plant is destined to live. Beginning with the first dawn of sunlight,

they perpetually suck in carbonic acid from the atmosphere, and give off oxygen gas in nearly equal volume till the sun goes down. Then, with a view to other chemical ends, and, obedient to the retiring sun, they change the nature of their work. While darkness lasts, they take back carbonic acid from the air, and give out again pure oxygen gas. And thus, day after day, the leafy labor proceeds, and by the aid of the raw materials which the working mouths thus incessantly carry out and in, other vital parts within the plant produce the varied forms of matter of which the vegetable substance consists. The solid stem is formed, as it were, of compressed and hardened air; and vast forests on a thousand hills thus steal from the atmosphere the carbonaceous matter of which they mainly consist.

But a marvel of wondrous forethought discloses itself as we interrogate more nearly this mutual relation between terrestrial plant-life and the air which surrounds it. The quantity of carbon in the air, as we have seen, is small; some thirty odd grains over every square inch. The active growth of vegetable matter over the entire surface of the globe, is able to convert the whole of this carbon into the substance of solid wood within the lifetime of a single generation of men. But hundreds of generations of men have already lived on the earth, and thousands of generations of other animals before him, yet carbon is as abundant in the atmosphere as ever, and vegetable growth, in similar circumstances, quite as luxuriant. There must, therefore, be some natural sources of supply from which carbonic acid gas flows into the air, as fast as the leafy mouths withdraw it. These sources, also, must be watched and regulated, that they may not pour it in so fast as to increase unduly the natural proportion of this poisonous gas in an atmosphere which man and countless other animals perpetually breathe. These several conditions are beutifully fulfilled by a series of compensating natural operations, which, like the growth of plants, form a part of the existing system of things; and, like it, never cease to proceed at a duly measured pace.

Thus, plants die, and the carbon of their stems and leaves is gradually resolved again into carbonic acid by the gradual progress of decay, or by the quicker agency of fire. Or the plant is eaten by the living animal, and after many chemical dhanges within the animal's body, its carbon is breathed forth again from the lungs and skin in the form of carbonic acid. In these several ways the very same carbon which the plantsleaf has taken from the air, is again, in a great measure, returned to it. A certain small and indefinite proportion of their carbon is indeed yearly buried in the soil, or covered up in the depths of the sea, or accumulated in bogs or dismal swamps. But to make up for this, the earth itself, from bubbling springs, from myriads of unseen fissures, and from the open mouths of many volcanoes pours forth a ceaseless contribution of carbonic acid gas—ceaseless, yet in such wise limited, that

so long as vegetation lasts, it cannot render the atmosphere unwholesome to animal life. To the knowledge of these and many similar adjustments, the study of the chemistry of the air we breathe, has gradually led us.

Turn now to the water we drink. In this admirable fluid, so clear, so bright, so grateful to the system, so healthful to the temperate, so necessary to all: the delight of Grecian song, the charm of the Eastern paradise, of this fluid,—lauded with justice by the physiologist, and worshipped, not unduly, by the total abstainer—chemistry tells us that three-fourths of our apparently solid bodies consist, and that it forms nearly as large a proportion of all living vegetables during the height and vigor of their growth. In this fluid, looked upon as elementary till nearly our own times, modern search has taught us to see the result of a subtle union between the oxygen we have spoken of, and another gas, to which the name of hydrogen (water-former,) has been given. Kindle this latter gas in the air, and it burns with a pale flame. Hold a cold bell glass over the flame, and its under surface will become bedewed with moisture, and drops of water will trickle down its sides. Collect this water and submit it to a current of electricity; the liquid will disappear, and in its stead the two gases oxygen and hydrogen will remain. These experiments prove, *first*, that while burning in the air, the hydrogen unites with the oxygen of the atmosphere, and forms water; and *second*, that the water thus formed consists of these two gaseous constituents only, compressed and bound together by some incomprehensible connexion, which it makes us no wiser to call chemical combination.

It is, indeed, incomprehensible how water, the enemy of fire, should itself consist of two gases, the one of which burns most readily, while the other is the great natural supporter of living fire. And it is equally strange that oxygen, so indispensable to animal life, should form eight-ninths by weight of a liquid in which few terrestrial animals can live for more than two or three seconds of time. By no known theory of physical or mechanical union can we satisfactorily explain how properties so new should be the result of such chemical combinations.

The chemical study of this water in its relations to animal and vegetable life presents new points of interest. The most important of its chemical properties are so familiar to us that we rarely think of them, and certainly do not sufficiently prize them. Pure water has neither taste, nor smell, nor pungency. It is neither sour like vinegar, nor sweet like sugar, nor alkaline like soda. It irritates no nerve of sensation, even the most delicate, nor is the tenderest part of the animal frame disturbed by contact with this universal fluid. It is thus fitted to penetrate unfelt into the subtlest tissues, and without causing the slightest jar to flow along the finest, most sensitive, and most hair-like vessels. It soothes and assuages wherever it comes, lessening inflammation, lulling pain, diluting

unhealthy fluids within the body, and washing morbid humors and waste materials from the sickly and changing frame.

Again, as a cooling agent water is equally invaluable. In a dry and a thirsty land we feel and acknowledge the pleasure of bathing our heated body in the sea or the running stream. But we are less sensible how it watches over us, as it were, every passing moment, dispelling its rising heat, and removing from the body every excess of warmth which might disturb the equable working of its many parts. Do we eat inflammatory food, or drink overstimulating fluids, the excess of bodily warmth produced converts a portion of water into vapor, and the lungs throw it off into the air. Do we by hard labor, or other unusual exertion, exalt the temperature of the body, the same water again takes up the superfluous heat, and bathing with perspiration both skin and lungs, restrains within due bounds the growing inflammation.

But more widely useful still in relation to vegetable and animal life is the property which water possesses of dissolving and rendering fluid a host of usually solid bodies. Put sugar or salt into water, it disappears and becomes fluid and penetrative like the water itself. The salt sea contains within its bosom many substances so dissolved; the fluids that circulate through our veins are chiefly water holding various compound bodies in solution; the moisture which the plant-root drinks in carries with it into root, stem, and leaf many substances it has taken up from the soil; and the purest waters we consume for domestic use are not free from foreign matters of mineral and organic origin. In all this there is a purpose, and good flows to all living things from this solvent power of water.

It must suffice at present to mention one general benefit. Into the composition of the plant a variety of solid mineral substances enter, which it is the duty of the plant root to draw from the soil. In their solid form these substances could neither move freely through the soil nor find their way into the fine pores of the little rootlets. But dissolved in water, they move as freely as the liquid itself, and penetrate with it into the most delicate tissues of plant or animal. Thus along the finest vessels they ascend through stem, and twig, and leaf, and distribute themselves wherever their presence is required.

It is so also with the animal. Into all its parts solid saline and mineral matters enter as a necessary portion of their substance. These we introduce into the stomach along with our other food, but water must dissolve them there and make them fluid before they can find their way into the blood and be afterwards conveyed to the parts of the body, where their several services are required. And here comes into view a glimpse of wise beneficence in what at first sight appears only a form of material evil. The impurities, as we call them, of natural waters are often of real advantage to those who drink them, supplying saline and mineral matters in

which the food is deficient, or which the peculiar nature of the staple form of diet in a given region renders grateful to the enfeebled frame. The purest waters, therefore, are by no means to be considered as everywhere and in all cases the most wholesome. The natural waters of every locality are more or less medicated, so to speak, and the constitutions of the inhabitants by long use become adapted to their peculiar quality, and even their food is adjusted to it; so that to change their wonted beverage even for one more pure may sensibly affect the health for years to come, of large masses of people.

[To be continued.]

ARTICLE VIII.

My Own Times.

From a forthcoming work from the pen of EX-GOV. REYNOLDS.*

CHAPTER XI.—*Fort Jefferson—its History—Sketch of Capt. Piggot's Life—Sickness of the Garrison—Indian Assaults—Heroic Defence—Abandonment of the Fort—Piggot's Fort—The Ferry opposite St. Louis, Mo.*

Although Fort Jefferson was established before MY OWN TIMES, yet so many incidents arising out of the establishment of this fort, extending into MY OWN TIMES, and so many of the pioneers of Illinois being connected with it, that I deem it proper, in the scope of my work, to give some sketches of the history of the fort.

In 1781, the Government of Virginia, the great statesman, Thomas Jefferson, being Governor, knew that the Spanish Crown pretended to have some claim on the country east of the Mississippi, below the mouth of the Ohio; and to counteract this claim, ordered George Rogers Clark to erect a fort on the east side of the Mississippi, on the first eligible point below the mouth of the Ohio.

General Clark, with his accustomed foresight and extraordinary energy, levied a considerable number of citizen soldiers, and proceeded from Kaskaskia to the high land, known at this day as Mayfield's creek, five miles below the mouth of the Ohio. Here, on the east side of the Mississippi, he erected a fort, and called it

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* We are indebted to the politeness of the author for the following chapter in advance of the publication of his work entitled "MY OWN TIMES," now in press. In undertaking to perpetuate the names and deeds of the heroic pioneers of the West, the author has entitled himself to the gratitude not only of their descendants but of the country at large. His is the labor of the *philanthropist* seeking to collect and treasure up every good and noble action for future example and instruction. And for his encouragement we may be allowed to say that to all who thus labor there is a sure reward.—SEN. ED.

Jefferson, in honor of the then Governor of Virginia. It was neglected to obtain the consent of the Indians for the erection of the fort, as the Governor of Virginia had requested. This neglect proved to be a great calamity. Clark encouraged immigration to the fort, and promised the settlers lands. Capt. Piggot and many others followed his standard.

The fort being established, Gen. Clark was called away to the frontiers of Kentucky, and left the fort for its protection in the hands of Capt. James Piggot, and the soldiers and citizens under him.

Capt. Piggot was a native of Connecticut, and was engaged in the privateering service in the Revolutionary war. He was in danger of assassination by the enemy in his native State, and emigrated to Westmoreland county, Pa. He was appointed Captain of a company in the Revolution by the Legislature of his adopted State, and served under Generals St. Clair and Washington. He was in the battles of Brandywine, Saratoga, and marched to Canada. By severe marches and hard service, his health was impaired so that he was forced to resign his captaincy, and with his family, he left his residence in Westmoreland county, and came west with Gen. Clark.

Several families settled in the vicinity of Fort Jefferson, and some in it; but all attempted to cultivate the soil to some extent for a living.

The Chickasaw and Chocktaw Indians became angry for the encroachments of the whites, and in August, 1781, commenced an attack on the settlements around the fort. The whole number of warriors must have been ten or twelve hundred, headed by the celebrated Scotchman Colbert, whose posterity figured as half-breeds. These tribes commenced hostilities on the settlements around Fort Jefferson. The Indians came first in small parties, which saved many of the inhabitants. If they had reached the settlement in a body, the whole white population outside of the fort would have been destroyed.

As soon as the preparation for the attack of the Indians on the fort was certainly known, a trusty messenger was dispatched to the Falls of the Ohio, as it was called at that day, and for years afterwards, for more provisions and ammunition. If support did not arrive in time, the small settlements and garrison would be destroyed, and it was extremely uncertain if succur would reach the fort in time.

The settlement and fort were in the greatest distress; almost starving, no ammunition, and such great distance from the settlements at Kaskaskia and the Falls.

The first parties of Indians killed many of the inhabitants before they could be moved to the fort, and there were great danger and distress in marching them into the fort. Also the sickness prevailed to such extent, that more than half were down sick at the

time. The famine was so distressing, that it was said they had to eat the pumpkins as soon as the blossoms fell off the vines. This Indian marauding and murdering private persons, and families, lasted almost two weeks before the main army of Indian warriors reached the fort. The soldiers aided and received in the fort all the white population that could be moved.

The whole family of Mr. Music, except himself, was killed and inhumanly butchered by the enemy. Many other persons were also killed.

In the skirmishes a white man was taken prisoner, who was compelled, to save his life, to report *the true state of the garrison.* This information added fury to the already heated passions of the savages.

After the arrival of the warriors, with Colbert at their head, they besieged the fort for six days and nights. During this time no one can describe the misery and distress the garrison was doomed to suffer. The water had almost given out. The river was falling fast, and the water in the wells sunk with the river. Scarcely any provisions remained, and the sickness raged so in the fort, that many could not be stirred from the beds. The wife of Capt. Piggot, and some others, died in the fort, and were buried inside of the walls, while the Indians besieged the outside. If no relief came, the garrison would inevitably fall into the hands of the Indians and be murdered.

It was argued by the Indians with the white prisoner, that if he told the truth, they would spare his life. He told them truly that more than half in the fort were sick—that each man had not more than three rounds of ammunition, and that scarcely any provisions were in the garrison. On receiving this information, the whole Indian army retired about two miles, to hold a council. They sent back Colbert and three chiefs with a flag of truce to the fort.

When the whites discovered the white flag, they sent out Capt. Piggot, Mr. Owens, and one other man, to meet the Indian delegation. This was done for fear the enemy would know the desperate condition of the fort. The parley was conducted under the range of the guns of the garrison.

Colbert informed them that they were sent to demand a rurrender of the fort at discretion; that they knew the defenceless condition of the fort, and to surrender it might save much bloodshed. He further said: that they had sent a great force of warriors up the river to intercept the succur for which the whites had sent a messenger. This the prisoner had told them. Colbert promised he would do his best to save the lives of the prisoners, all if they would surrender, except a few, whom the Indians had determined to kill. He said, the Indians are pressing for the spoils, and would not wait long. He gave the garrison one hour for a decision.

On receiving this information, the garrison had an awful and gloomy scene presented to them. One person exclaimed: "*Great God direct us what to do in this awful crisis!*"

After mature deliberation, Piggot, and the other delegates were instructed to say, that nothing would be said, as to the information received from the prisoner. If we deny his statements, you may kill him—we cannot confide in your promises to protect us; but we will promise, if the Indians will leave the country, the garrison will abandon the fort and the country as soon as possible. Colbert agreed to submit this proposition in council to the warriors. But on retiring, Mr. Music, whose family was murdered, and another man, shot at Colbert, and a ball wounded him. This outrage was greatly condemned by the garrison, and the two transgressors were taken into custody. The wound of Colbert was dressed, and he guarded safely to the Indians.

The warriors remained long in council, and by a kind providential act, the long wished for succors did arrive in safety from the "Falls."

The Indians had struck the river too high up, and thereby the boat with the supplies escaped. The provisions and men were hurried into the fort, and preparations were made to resist a night attack by the warriors.

Every preparation that could be made for the defence of the fort was accomplished. The sick and small children were placed out of the way of the combatants, and all the women and children of any size were instructed in the art of defence. The warriors, shortly after dark, thought they could steal on the fort and capture it; but when they were frustrated, they with hideous yells and loud savage demonstrations, assaulted the garrison, and attempted to storm it. The cannon had been placed in proper position to rake the walls, and when the warriors mounted the ramparts, the cannon swept them off in heaps. The enemy kept up a stream of fire from their rifles on the garrison, which did not much execution. In this manner, the battle aged for hours; but at last the enemy were forced to recoil, and withdrew from the deadly cannon of the fort. Colbert and other chiefs again urged the warriors to the charge; but the same result to retire was forced on them again. Men and women at that day were soldiers by instinct. It seemed they could be not otherwise.

The greatest danger was for fear the fort would be set on fire. A large dauntless Indian, painted for the occasion, by some means, got on the top of one of the block houses, and was applying fire to the roof. A white soldier, of equal courage, went out of the block house and shot the Indian, as he was blowing the fire to the building. The Indian fell dead on the outside of the fort and was packed off by his comrades.

After a long and arduous battle, the Indians withdrew from the fort. They were satisfied; the Indians had arrived in the garrison,

and they could not storm it. They packed off all the dead and wounded. Many were killed and wounded of the Indians, as much blood was discovered in the morning around the fort. Several of the whites were also wounded, but none mortally. This was one of the most desperate assaults made by the Indians in the West, on a garrison so weak and distressed and defenceless.

The whites were rejoiced at their success, and made preparations to abandon the premises with all convenient speed.

The citizen soldiers at Fort Jefferson all abandoned the fort; and some wended their way to Kaskaskia, and others to the Falls. Capt. Piggot, with many of his brave companions, arrived at Kaskaskia, and remained there some years.

This flood of brave and energetic immigrants, so early as the year 1781, was the first considerable acquisition of American population Illinois received. Many of the most worthy and respectable families of Illinois can trace back their lineage to this illustrious and noble ancestry, and can say with pride and honor, that my forefathers fought in the Revolution to conquer the Valley of the Mississippi.

About the year 1783, Capt. Piggot established a Fort not far from the bluff in the American Bottom, west of the present town of Columbia, in Monroe county, which was called Piggot's Fort, or the Fort of the *grand kisseau*. This was the largest fortification erected by the Americans in Illinois, and at that day was well defended with cannon and small arms. In 1790, Capt. Piggot and forty-five other inhabitants at this Fort, sometimes called the BIG RUN in English, signed a petition to Governor St. Clair, praying for grants of land to the settlers. It is stated in that petition that there were seventeen families in the Fort.

I presume it was on this petition that the Act of Congress was passed granting to every settler on the public land in Illinois four hundred acres, and a militia donation of a hundred acres to each man enrolled in the militia service of that year.

Governor St. Clair knew the character of Capt. Piggot in the army of the Revolution, and appointed him the presiding Judge of the Court of St. Clair county.

Capt. Piggot, in the year 1795, established the first ferry across the Mississippi, opposite St Louis, Mo., known now as Wiggin's Ferry; and Governor Tradeau, of Louisiana, gave him license for a ferry and to land on the west bank of the river in St. Louis, with the privilege to collect the ferriage. He died at the ferry, opposite St. Louis, in the year 1799, after having spent an active and eventful life in the Revolution, and in the conquest and the early settlement of the West.

COMMERCIAL

Commerce of the

Statement exhibiting the commerce of each State and

STATES.	VALUE OF EXPORTS. Domestic Produce.		
	In American vessels.	In foreign vessels.	Total.
Maine	$1,851,852	$78,179	$1,930,031
New Hampshire	.....	913	913
Vermont	310,078	.....	310,078
Massachusetts	9,916,532	7,979,206	17,895,738
Rhode Island	422,642	3,404	426,046
Connecticut	720,925	382	721,307
New York	77,504,476	28,047,264	105,551,740
New Jersey	.....	2,225	2,225
Pennsylvania	7,739,874	2,106,936	9,846,810
Delaware	80,920	.....	80,920
Maryland	8,118,046	3,537,204	11,655,250
District of Columbia	37,992	.....	37,992
Virginia	3,036,601	1,655,617	4,752,218
North Carolina	271,463	120,434	391,897
South Carolina	7,780,925	4,201,380	11,982,308
Georgia	2,286,869	2,520,806	4,807,675
Florida	3,057,856	906,841	3,964,697
Alabama	7,255,550	6,656,062	13,911,612
Louisiana	43,428,747	17,227,840	60,656,587
Mississippi	.....	.....	.....
Tennessee	.....	.....	.....
Missouri	.....	.....	.....
Ohio	442,518	300,486	743,004
Kentucky	.....	.....	.....
Michigan	225,455	179,726	405,181
Illinois	254,793	42,253	297,046
Texas	504,036	258,412	762,448
California	720,342	120,570	840,912
Oregon	41,314	1,393	42,707
Wisconsin	30,464	.....	30,464
Minnesota	.....	.....	.....
Califor. not red'd in time	.....	.....	1,343,064
	176,100,273	75,947,533	253,390,870

DEPARTMENT.

United States.

Territory, from July 1st, 1853, to June 30th, 1854.

	VALUE OF IMPORTS.		
Total American and foreign produce.	In American vessels.	In foreign vessels.	Total.
$2,589,041	$1,038,857	$1,323.043	$2,361,900
1,031	27,257	7,248	34,505
1,445,244	337,279	.....	337,279
21,438,504	30,141,034	18,422,754	48,563,788
439,981	308,755	129,217	437,972
739,575	546,970	16,007	562,977
122,534,646	145,750,943	49,676,990	195,427,933
2,225	685	3,286	3,971
10,104,416	12,991,511	8,367,795	21,359,306
80,920	.....	.....	.....
11,782,632	6,031,192	756,360	6,787,552
37,992	48,108	.....	48,108
4,754,148	722,129	554,087	1,276,216
391,897	214,860	97,773	312,633
11,995,016	1,392,953	318,432	1,711,385
4,808,375	183,996	152,955	336,951
3,964,697	16,522	12,447	28,969
13,911,612	137,828	587,782	725,610
60,931,852	12,454,089	1,968,065	14,422,154
.....	11,386	.....	11,386
.....	.....	.....	.....
.....	.....	.....	.....
744,584	556,974	233,108	790,082
.....	.....	.....	.....
434,495	204,286	.....	204,286
297,046	71,421	7,329	79,344
1,314,449	125.480	105,943	231,423
978,651	2,015,377	3,324,037	5,339,414
42,827	.....	48,932	48,932
30,464	45,641	3,533	49,174
.....	740	104	844
.....	.....	.....	3,068,287
275,796,320	215,376,273	86,117,821	304,562,381

Statement of the Commerce of each State and Territory.

[Continued.]

STATES.	TONNAGE ENTERED INTO THE UNITED STATES			
	American.		Foreign.	
	Number.	Tons.	Number.	Tons.
Maine	424	115,819	760	63,100
New Hampshire	8	1,327	31	2,550
Vermont	442	31,215	204	13,533
Massachusetts	1,410	419,974	2,691	379,976
Rhode Island	102	18,960	61	9,580
Connecticut	107	24,862	46	8,356
New York	4,359	2,148,846	4,114	1,039,508
New Jersey	4	452	24	2,851
Pennsylvania	453	143,836	131	50,503
Delaware	.....	.....	.....	.....
Maryland	347	111,404	150	42,044
District of Columbia	6	1,943	.....	.....
Virginia	138	68,259	103	28,484
North Carolina	96	13,588	20	3,701
South Carolina	143	55,813	127	34,890
Georgia	40	11,463	83	44,147
Florida	68	23,486	25	7,564
Alabama	46	28,450	87	57,871
Louisiana	653	342,763	350	156,464
Mississippi	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....
Missouri	.....	.....	.....	.....
Ohio	378	53,185	153	19,427
Kentucky	.....	.....	.....	.....
Michigan	24	6,068	199	61,481
Illinois	19	6,236	3	703
Texas	4	824	14	4,425
California	184	123,351	271	97,835
Oregon	.....	.....	1	231
Total	9,455	3,752,115	9,648	2,132,224

☞ Crews on American vessels: men 135,927; boys, 726. Crews on Foreign vessels: men 100,243; boys 1,212.

Statement exhibiting a condensed view of the tonnage of the several districts of the United States, on the 30th of June, 1854.

Districts.	Registered tonnage.	Enrolled and licen'd tonnage.	Total tonnage of each district.
	Tons.		
Passamaquoddy ...Maine.....	13,289	17,394	30,683
Machias .....do.....	4,356	23,329	27,685
Frenchman's Bay....do.....	3,890	39,979	41,869
Penobscot.....do.....	4,884	40,107	44,991
Belfast .....do.....	17,504	38,394	55,899
Bangor.....do.....	15,687	23,751	39,438
Waldoborough.....do.....	53,824	68,910	122,735
Wiscasset.....do.....	6,063	73,628	19,692
Bath .....do.....	124,922	29,578	154,501
Portland.....do.....	90,234	33,438	123,672
Saco .....do.....	2,531	2,461	4,993
Kennebunk.....do.....	14,695	3,405	18,100
York.....do.....	.....	1,835	1,835
Portsmouth ....New Hampshire	19,917	8,920	28,838
Burlington.....Vermont.....	.....	7,374	7,374
Newburyport..Massachusetts...	27,986	9,814	37,810
Ipswich .....do.....	.....	265	265
Gloucester .....do.....	2,805	29,764	32,570
Salem.....do.....	20,300	10,228	30,528
Beverly.....do.....	.....	4,035	4,035
Marblehead .....do.....	.....	6,467	6,467
Boston.....do.....	437,323	58,555	495,879
Plymouth .....do.....	2,210	8,399	10,609
Fall River.....do.....	3,951	13,405	17,357
New Bedford .....do.....	156,568	9,342	165,910
Barnstable .....do.....	7,514	74,442	81,957
Edgartown .....do.....	5,725	2,245	7,971
Nantucket.....do.....	22,335	2,374	24,710
Providence.....Rhode Island.	10,254	9,151	19,405
Bristol.....do.....	12,642	1,960	14,603
Newport.....do.....	7,462	4,439	11,902
Middletown.....Connecticut...	794	15,366	16,161
New London.....do.....	25,324	17,095	42,419
Stonington.....do.....	14,109	9,972	24,081
New Haven.. .....do.....	7,220	13,125	20,346
Fairfield.....do.....	2,118	24,192	26,310
Champlain .....New York.....	.....	1,342	1,342
Sackett's Harbor.....do.....	.....	7,570	7,570
Oswego .....do.....	.....	24,365	24,365
Niagara .....do.....	.....	868	868
Genessee.....do.....	.....	.....	.....
Oswegatchie .....do.....	.....	3,749	3,749

Statement of the tonnage of the several districts, &c.—Continued.

Districts.		Registered tonnage.	Enrolled and licensed ton.	Total tonnage of each dis.
			Tons.	
Buffalo Creek	New York	.....	82,678	82,678
Sag Harbor	do	8,713	4,288	13,002
Greenport	do	3,812	6,442	10,254
New York	do	754,490	508,307	1,262,798
Cape Vincent	do	.....	4,801	4,801
Cold Spring	do	2,924	675	3,599
Perth Amboy	New Jersey	.....	20,229	20,229
Bridgeton	do	.....	18,622	18,622
Burlington	do	.....	13,219	13,219
Camden	do	.....	17,975	17,975
Newark	do	.....	8,614	8,614
Little Egg Harbor	do	.....	9,745	9,745
Great Egg Harbor	do	.....	17,541	17,541
Philadelphia	Pennsylvania	74,951	193,794	268,764
Presque Isle	do	.....	8,210	8,210
Pittsburg	do	.....	84,870	84,870
Wilmington	Delaware	845	13,428	14,274
Newcastle	do	.....	4,280	4,280
Baltimore	Maryland	102,147	68,688	170,835
Oxford	do	133	12,452	12,585
Vienna	do	1,690	23,007	24,697
Snowden	do	.....	5,305	5,305
St. Mary's	do	.....	3,180	3,180
Town Creek	do	.....	1,646	1,646
Annapolis	do	.....	1,957	1,975
Georgetown,	Distr. of Columbia	2,883	33,098	35,982
Alexandria	Virginia	3,770	8,634	12,234
Norfolk	do	13,253	16,186	29,440
Petersburg	do	.....	2,195	2,195
Richmond	do	5,172	6,909	11,881
Yorktown	do	.....	5,911	5,911
Tappahannock	do	181	6,113	6,295
Accomac C. H.	do	.....	6,019	6,019
East River	do	.....	1,606	1,606
Yeocomico	do	.....	3,955	3,955
Cherrystone	do	.....	1,173	1,173
Wheeling	do	.....	4,127	4,127
Wilmington	North Carolina	10,683	9,271	19,955
Washington	do	1,838	6,922	8,761
Newbern	do	1,320	4,122	5,442
Edenton	do	133	792	925
Camden	do	1,208	12,653	13,861
Beaufort	do	394	2,587	2,981
Plymouth	do	1,155	3,275	4,430
Ocracoke	do	.....	1,442	1,442

Statement, &c.,—Continued.

District.	Registered tonnage.	Enrolled & licensed ton.	Total tonnage of each dis.
	Tons.		
Charleston.....South Carolina	13,726	24,375	38,102
Georgetown.....do.....	1,838	2,174	4,013
Beaufort.....do.....	.....	.....	.....
Savannah.....Georgia.....	15,533	9,409	24,942
Sunbury.....do.....	.....	.....	.....
Brunswick.....do.....	117	1,051	1,168
Hardwick .....do.....	.....	.....	.....
St. Mary's.....do.....	397	792	1,190
Pensacola .....Florida.....	799	2,054	2,853
St. Augustine.....do.....	.....	.....	.....
St. Mark's.....do.....	1,363	.....	1,363
St. John's .....do.....	211	1,069	1,280
Appalachicola .....do.....	97	2,110	2,207
Key West .....do.....	4,423	2,265	6,689
Pearl River....Mississippi.....	.....	1,363	1,363
Vicksburg.....do.....	.....	.....	.....
New Orleans.....Louisiana....	103,996	79,821	183,818
Teche.....do.....	.....	3,255	3,255
Nashville.....Tennessee.....	.....	5,726	5,726
Memphis .....do.....	.....	1,894	1,894
Louisville .....Kentucky.....	.....	20,122	20,122
St. Louis.....Missouri.....	.....	48,575	48,575
Chicago.....Illinois.....	.....	31,041	31,041
Sandusky.....Ohio.....	.....	6,054	6,054
Cuyahoga.....do.....	.....	45,483	45,483
Cincinnati.....do.....	.....	23,842	23,842
Miami .....do.....	.....	5,479	5,479
New Albany.....Indiana.....	.....	2,952	2,952
Milwaukie .....Wisconsin.....	.....	14,217	14,217
Detroit .....Michigan.....	.....	52,456	52,456
Michilimackinac.....do.....	.....	4,393	4,393
Galveston .....Texas.....	1,862	5,818	7,681
Saluria .....do.....	109	1,036	1,145
Point Isabel .....do.....	644	226	871
SanFrancisco.....California...	46,262	47,257	93,519
Sonoma .....do.....	.....	1,215	1,215
Sacramento.....do.....	629	5,892	6,522
Astoria .....Oregon.....	.....	.....	.....
Alton.....Illinois.....	.....	309	309
Galena .....do.....	.....	334	334
Mobile .....Alabama.....	11,605	21,994	33,599
Puget Sund .....Oregon.....	42	1,149	1,192
Total.....	2,333,819	2,469,083	4,802,902

☞Fractions of Tons omitted.

A comparative view of the registered and enrolled tonnage of the United States, showing the tonnage employed in the whale fishery, also the proportion of the enrolled and licensed tonnage employed in the coasting trade, cod fishery, mackerel fishery, and whale fishery, from 1815 to 1854, inclusive.

Years.	Registered tonnage.	Enrolled tonnage.	Total tonnage.	Registered tonnage in the whale fishery.	Tonnage employed in steam navigation.	Proportion of the enrolled tonnage employed in the			
						Coasting trade.	Cod fishery.	Mackerel fishery.	Whale fish.
	Tons.								
1815.....	854,294	513,833	1,368,127	.....	.....	435,066	26,510	.....	1,229
1816.....	800,759	571,458	1,372,218	.....	.....	479,979	37,879	.....	1,168
1817.....	809,724	590,186	1,399,921	84,71	.....	481,457	53,990	.....	349
1818.....	606,088	619,095	1,225,184	16,134	.....	503,140	58,551	.....	614
1819.....	612,930	647,821	1,260,751	31,700	.....	523,556	65,044	.....	686
1820.....	919,047	661,118	1,280,166	35,391	.....	539,080	60,842	.....	1,053
1821.....	619,896	679,062	1,298,958	26,070	.....	559,435	51,351	.....	1,924
1822.....	628,150	696,548	1,324,699	45,449	.....	573,080	58,405	.....	3,133
1823.....	639,920	696,644	1,336,565	39,918	24,*79	566,408	67,621	.....	585
1824.....	669,972	729,190	1,389,163	33,165	21,609	589,223	68,419	.....	180
1825.....	700,787	722,323	1,423,110	35,379	23,061	587,273	70,626	.....	.....
1826.....	737,978	796,210	1,534,189	41,757	34,058	666,420	63,761	.....	226
1827.....	747,170	873,437	1,620,607	45,653	40,197	732,937	74,048	.....	328
1828.....	812,619	928,772	1,741,391	54,621	39,418	758,922	74,947	.....	180
1829.....	650,142	610,654	1,260,797	57,284	54,036	508,858	101,796	.....	.....
1830.....	576,675	615,311	1,191,776	38,911	64,471	516,978	61,554	35,973	792
1831.....	620,451	647,394	1,267,846	82,315	34,445	539,723	60,977	46,210	481
1832.....	686,989	752,460	1,439,450	72,868	90,813	649,627	54,027	45,427	377

1831.....	620,451	647,394	1,267,846	82,315	34,445	539,723	60,977	46,210	152
1832.....	686,989	752,460	1,439,450	72,868	90,813	649,627	54,027	45,427	377
1833.....	750,026	856,123	1,606,149	101,158	101,849	744,198	62,720	48,725	478
1834.....	857,488	901,468	1,758,907	108,060	122,815	783,618	54,403	61,082	364
1835.....	885,520	939,118	1,824,940	97,649	122,815	792,301	72,374	64,443	.....
1836.....	897,774	984,328	1,820,132	144,680	145,556	873,023	62,307	64,425	1,573
1837.....	810,447	1,086,238	1,896,685	127,241	154,764	956,980	80,551	46,810	1,891
1838.....	822,591	1,173,047	1,995,639	119,629	193,413	1,041,105	70,064	56,649	5,229
1839.....	834,244	1,262,234	2,096,478	131,845	201,938	1,153,551	72,258	35,983	439
1840.....	899,764	1,280,999	2,180,764	136,926	202,339	1,176,694	76,035	28,269	.....
1841.....	845,803	1,184,940	2,130,741	157,405	175,088	1,107,067	66,551	11,321	.....
1842.....	975,358	1,117,031	2,092,390	151,612	229,661	1,045,753	54,804	16,096	377
1843.....	1,009,305	1,149,207	2,158,601	152,374	236,867	1,076,155	61,224	11,775	143
1844.....	1,068,764	1,211,330	2,280,095	168,293	272,179	1,109,614	85,224	16,170	321
1845.....	1,095,172	1,321,829	2,417,002	190,695	326,018	1,190,898	69,825	21,413	206
1846.....	1,131,486	1,431,798	2,562,084	189,980	317,893	1,289,870	72,516	36,463	439
1847.....	1,241,312	1,597,732	2,839,045	193,858	404,841	1,452,623	70,177	31,451	.....
1848.....	1,360,886	1,793,155	3,154,041	192,179	427,891	1,620,988	82,651	43,558	532
1849.....	1,438,941	1,895,073	3,334,015	180,186	462,394	1,730,410	42,970	73,853	.....
1850.....	1,585,711	1,949,743	3,535,454	146,016	525,946	1,755,796	85,646	58,111	.....
1851.....	1,726,307	2,046,123	3,772,439	181,644	583,607	1,854,317	87,475	50,539	.....
1852.....	1,899,448	2,238,992	4,138,440	193,797	643,240	2,008,021	102,659	72,546	.....
1753.....	2,103,674	2,303,336	4,407,010	193,203	514,097	2,134,256	109,227	59,850	.....
1854.....	2,333,819	2,469,083	4,802,902	181,901	676,607	2,273,400	102,194	35,041	.....

Statement showing the number and class of vessels built, and the tonnage thereof, in the several States and Territories of the United States from 1815 to 1354, inclusive.

Years.	CLASS OF VESSELS.					Tot'l number of vessels built.	TOTAL TONNAGE.
	Ships and barques.	Brigs.	Schooners.	Sloops and canal boats.	Steamers.		Tons.
1815	136	124	681	271	....	1,314	154,624
1816	76	122	781	424	....	1,403	131,668
1817	34	86	559	394	....	1,073	86,393
1818	53	85	428	332	....	898	82,421
1819	53	82	473	242	....	850	79,817
1820	21	60	301	152	....	534	47,784
1821	43	89	248	127	....	507	53,856
1822	64	134	260	168	....	623	75,346
1823	55	127	260	165	15	622	75,007
1824	56	156	377	166	26	781	90,939
1825	56	197	538	168	35	994	114,997
1826	71	187	482	227	45	1,012	126,438
1827	55	153	484	244	38	934	104,342
1828	73	108	474	196	33	884	98,375
1829	44	68	485	145	43	785	77,098
1830	25	56	403	116	37	637	58,094
1831	72	95	416	94	34	711	85,962
1832	132	143	568	122	100	1,065	144,539
1833	144	169	625	185	65	1,188	161,636
1834	98	94	497	180	68	937	118,330
1835	25	50	301	100	30	507	46,238
1836	93	65	444	164	124	890	113,627
1837	67	72	507	168	135	949	122,987
1838	66	79	501	153	99	898	113,135
1839	83	89	439	122	125	858	120,989
1840	97	109	378	224	64	872	118,309
1841	114	101	310	157	78	762	118,893
1842	116	91	273	404	137	1,021	129,083
1843	58	34	138	173	79	482	63,617
1844	73	47	204	279	163	766	103,537
1845	124	87	322	342	163	1,038	146,018
1846	100	164	576	355	225	1,420	188,293
1847	151	168	689	392	198	1,598	243,732
1848	254	174	701	547	175	1,851	318,075
1849	198	148	623	370	208	1,547	256,577
1850	247	117	547	290	159	1,360	272,218
1851	211	65	522	326	233	1,367	298,203
1852	255	79	584	267	259	1,444	351,493
1853	269	95	681	394	271	1,710	425,572
1854	334	112	661	386	281	1,774	535,616

F. BIGGER, Register.

Treasury Department, Register's Office, November 1, 1854.

Imports of Foreign Merchandize at St. Louis.

It must be gratifying to the friends of the West to learn that while there has been a falling off in the amount of foreign merchandize imported at the eastern cities, the amount of revenue collected at St. Louis for the year ending June 30, 1855, is seventy five per cent. more than the preceding year.

This is to be regarded as one of the most encouraging features in the commerce of our city; for besides the influence it is calculated to produce on the minds of western dealers, it tends to establish St. Louis as a financial center, and to relieve the West in some degree from the constant drain of money for the benefit of the eastern cities.

We copy the following statement from the "Mo. Republican," of the 14th ultimo.

The Surveyor of this port, W. A. Linn, Esq., has kindly furnished us with a statement of the duties collected upon imports during the fiscal years 1854 and 1855, ending June 30th, as follows:

Duties collected upon imports during the fiscal year ending June 30, 1854	$373,868 04
Duties collected upon imports during the year ending June 30, 1855	654,758 06
Increase over 1854	$280,890 02
Hospital money collected for the fiscal year ending June 30, 1854	$3,195 61
Hospital money collected for the year ending June 30, 1855	3,646 95
Tonnage tax for 1854, for licences to pilots and engineers	1,621 50
Tonnage tax for 1855 for same	3,386 95

Amount of tonnage owned and belonging to the port of St. Louis, June 30, 1855, 48,261 82-95 tons.

Gold deposited at the U. S. Sub Treasury at St. Louis for the year ending June 30, 1855, 1 ton, 2 qrs., 5 lbs., 9 oz. avoirdupois.

Selkirk Trade.

THE RED RIVER TRAIN. — Quite a curious and animated scene was presented last Saturday on Robert street, in front of Forbes & Kittson's store. The street was literally blocked up with the antiquated wooden carts of the train from the Selkirk settlement; horses and cattle, with all sorts of nondescript harnesses upon them, were tethered round about, buffalo robes lay piled upon the

ground, and a busy crowd of the dark skinned strangers were moving to and fro, earnestly engaged in the work of loading up the carts from the warehouse. Even to those accustomed to these semi-annual visitors the sight constituted a novelty, and in a stranger it could not but awaken a lively interest and curiosity. There is something so odd in all the arrangements they have for travel; things are so rough and uncouth in appearance as to seem utterly unfit for the purpose to which they are applied, and it requires a little examination and some reflection upon the circumstances which governed the outfit, to show that it is about the best that could be adopted for the long and tedious journey of over six hundred miles that is performed.

This detachment numbers ninety-eight carts, and is altogether from the English settlement at Selkirk. The owners brought with them a large quantity of valuable peltries, and take back a full load of supplies of every sort, for which they have paid thousands of dollars in cash. It is well to say here that St. Paul is indebted for this English portion of the Red River trade to the earnest exertions of our townsman, Norman W. Kitson, Esq., who has for several years labored zealously to direct the trade of Selkirk from York Factory to this place—so that St. Paul, and not London, has now become the supplying source to gratify their wants. This is an important addition to their trading intercourse, and we are glad to hear that the traders have expressed themselves well pleased with the market, and the facilities they have found here. There can be scarcely any doubt, therefore, that the trade thus auspiciously opened, will be regularly continued. Nearly every place of business in the city has reaped a greater or less benefit from it at this time, and it should by all means be encouraged.

It is pretty certain that the whole train will start on the return trip to day, and in about twenty-five or thirty days from this, it will reach Selkirk. The route is by way of Crow Wing.

Mr. Kitson started alone in April last for the Red River of the North, and reached there in eleven days time. He succeeded in his object of directing the train from the York Factory, and then turned his steps homeward, arriving here about ten days before the carts, a pretty active, and certainly a most timely movement.

The horses and cattle brought down for sale have not realized the prices expected, but we are told that no loss has been incurred.

The American portion of the train, under the charge of Messrs. Rolette and Cavillier, is expected to arrive here some time between the 5th and 10th inst. It numbers one hundred and fifty carts, and is, we are informed, loaded with a very large and valuable stock of furs, &c. Those who come with it, will have large demands to make, and it cannot but be gratifying to our dealers to know that they are so soon to have such a number of good customers at their doors.—(*St. Paul Pioneer.*)

From the Cincinnati Columbian & G. W.

The Canals of Ohio and their Financial Condition.

The publication of an advertisement by the State of Pennsylvania, offering its Public Works for sale, suggests an inquiry into the financial condition of the Ohio Canals. They were undertaken and constructed when Canals were the highest species of internal improvement for the purposes of trade; and no suspicion was entertained that they would ever become obsolete. But time, human invention, and the advance of civilization are strange innovators upon human customs; they turn old ideas out of doors, and things which even fancy never dreamed of, become the every-day instruments of every day life. The fact is, the Canal is obsolete; there is no concealing the fact, if we would, and no use in denying it. Brinsley, the great Civil Engineer, said, that the greatest use of rivers was to FEED CANALS; but now an engineer would say, that the best use of a canal would be, to FEED STEAM ENGINES.

The Canals of Ohio were commenced in 1825, under the auspices of the Morrows, and Worthingtons, and Browns,—days when Ohio had great men,—and when the people preferred great men to empty-headed demagogues. New York had just completed the Erie Canal, and Canals were the rage. Dewitt Clinton came out to Ohio to inaugurate the Miami Canal, at Middletown. The main system was finished before 1830, and lived about twenty years, in prosperity and usefulness. They reached their acme of prosperity about 1851, and have since been rapidly declining.

One thing may be considered a maxim in all commercial locomotion. Men will not go slow when they can go fast. Of course, Canals take no passengers of consequence. On the same principle, they take no light goods of value. Still the friends of Canals insisted that the Canals must be preferred for heavy articles. They said they could carry them cheapest. This was thought conclusive, till the Reading Railroad, alongside the Schuylkill Canal, proved its superiority to the latter, for conveying coal. Since that the New York Railroads have come so severely into competition with the Erie Canal, that the question was before the New York Legislature last winter, whether the Railroads shall be taxed for the benefit of Canals!

But let us look into the final condition of the Ohio Canals. The following are the NETT RECEIPTS paid into the Ohio State Treasury from the Canals since 1850:

	1851.	1852.	1853.	1854.
Ohio Canal	$294,799	$196,693	$107 999	$82.587
Miami Canal	157.275	47,835	56 426	64.686
Muskingum Improvements	32,859	7,207	7.811	2,858
Hocking Canal	3.425	.....	1,839	2,325
Walhonding	.....	.....	.....	.....
Total	$487,856	$251,195	$174.075	$152.459

This is certainly growing smaller and smaller with a vengeance.

The diminution from 1851 to 1852 was nearly ONE HALF; the diminution from 1852 to 1853, was ONE-FOURTH; the diminution from 1853 to 1854 was 15 per cent. The nett revenue of 1854 was only about 31 per cent. of that in 1851.

The *aggregate* of Canal Receipts in 1854 was $508,000; the *nett Receipts* $152,559. It appears, therefore, that it costs the State of Ohio the moderate sum of *seventy per cent.* (!) to keep them in repair, and collect the rents! This was not in one year only. It cost more yet in 1853. In these two years, the tolls on the Canals were $1,300,000, while the nett receipts were only $326,000.

Under these circumstances, we cannot avoid the conclusion that the Ohio Canals have been *most wretchedly mismanaged.* How else is the thing to be accounted for? The Ohio Canals, and expenses, have cost *nearly double*, in proportion, that of the Railways; and yet, the Canal is, in every respect, a cheaper and less expensive machine than a railway. How, then, can we resist the conclusion, that there is mismanagement, if nothing worse, in the conduct of the official managers of the Canals.

Those who want to reform great public corruption, should remember that it is not in the *salaries* of public officers they are to look for the leaks. It is in the giving out of *contracts*, *agencies*, *commissions*, &c., in which large sums may be given to friends, and never discovered. Give out a job at only five per cent. higher than it ought to be, and if the amount is large, there will be fine pickings. This part of the subject, however, we need not dwell on. We are looking only at the financial question.

The Auditor of State reports the Public Debt at $15,200,000, nearly all of which has been incurred for the Canals; for which it seems, we received $152,459. The account of interest and receipts stands thus:

Debt	$15,200,000
Interest	900,000
Nett Receipts of Public Works	152,459
Provided by Tax	747,541

While our State Auditor, therefore, tells us we pay little for the State, here are some figures which tell a very different story.

The *nett* revenue of the Public Works is only 17 per cent. of the *interest* of the Public Debt. The Canals, therefore, are *worth* precisely that per cent. of the Public Debt. They are worth exactly *two millions, five hundred and eighty-four thousand dollars*, and they are worth no more. Will they ever be worth more? There is certainly no prospects of it. There willl probably be a revival of business on the Canals, this Fall, but it will be only temporary.

Putting the Public Works in the hands of capable and responsible men, may accomplish something in favor of the revenue; but, at last, there is little hope of improved revenue from them. The State of Ohio should either *lease* her works, or *sell* them. In either case, she will get more revenue than she ever can get out of such public officers, as have heretofore managed the Canals.

DEPARTMENT OF PUBLIC IMPROVEMENT.

Bloomington, Kankakee & Indiana State Line Railroad.

This is a very important work in the system of railroads concentrating at St. Louis. By this line a connection will be formed with the Southern Michigan and Michigan Central railroads; opening direct intercourse between St. Louis and the northwestern part of Indiana, and with the southern and central portions of Michigan.

The "Railroad Record" contains the following notice of this enterprise:

"The Southern terminus of this road is Bloomington, on the Illinois Central railroad, at the point where the Chicago branch diverges from the main line, and the northern terminus is Niles, on the Michigan Central railroad. Laporte, on the Northern Indiana and Southern Michigan railroad, is made also a point. At a meeting of citizens from Michigan, Indiana and Illinois, favorable to the construction of this road, held at Kankakee, on May 17, the following resolutions were adopted:

On motion of O. Beebe, Esq.,

Resolved, That the stock of this railroad be divided into shares of fifty dollars each.

On motion of W. A. Chatfield, Esq.,

Resolved, That Jesse W. Fell, Esq., A. Gridley, Esq , and W. F. M. Arney, Esq., of McLean county, be and are hereby authorized to open books in the counties of McLean and Livingston for the subscription of stock in the Bloomington, Kankakee and Indiana State Line Railroad; and W. A. Chatfield, Esq., Orson Beebe, Esq., James M. Perry, Esq., and Noel Vesser, Esq., in Kankakee county, on the 4th day of July next; and that they keep said books open till the amount of stock required by the charter of said railroad shall be obtained.

Resolved, That the board of corporators adjourn to meet in the Sherman House, in the city of Chicago, on the 21st day of June, at 2 o'clock, P. M."

Ohio and Mississippi Railroad Open to Vincenness.

The Western Division of this great work was opened on the 3d ultimo, and the event was celebrated at Vincennes, on the 4th, by a large number of citizens from Indiana, Illinois and Missouri.

The Mississippi Central Railroad.

The passenger train has commenced running on the Mississippi Central Railroad. It runs from the junction with the Memphis & Charleston road, at Pledgville, to Lamar, Miss, a distance of 11 miles, where it connects with L. SIMS & BRO's famous line of coaches to Holly Springs, Oxford, Coffeeville, Grenada, &c.

We had the pleasure of traveling over this road a few days since. Our impression at the time was that the track is not as well laid as it might be; but the Directors, we understand, say that any defects arising from this source shall be speedily remedied. One thing we think we can safely assert: *The bridges are admirably constructed*, (with cross ties.) So solid are they, that the trains run as swiftly over them as any other part of the road. At present, indeed, and as yet, they are more solid than the road bed. These bridges have been built by that experienced contractor, Mr. D. SHEPHERD, whose services in the same department of construction, we are pleased to learn, have been secured by the Memphis & Little Rock Railroad Company.

The Mississippi Central road will be ironed to Holly Springs in ample time for the next crop—say, by the middle or last of September.—(*Eagle & Enquirer, July 4th.*)

Memphis and Charleston Railroad.

From the fifth annual report of the Board of Directors of this road we learn that they expect to complete 129 miles of the eastern division, from Tuscumbia Landing to Stephenson, the point of intersection with the Nashville and Chattanooga Railroad, by November next. It is also expected that the first 30 miles east of Lagrange will be completed by July or August of the present year, which will make 75 miles of main road complete from Memphis east. The whole line is under contract, and is expected to be completed and in operation in time for the business of the fall of 1856. Rails have been recently purchased for the completion of the whole line.

We extract the following statement from the Report before us, showing the cost of the road, the condition of the company, &c.

EASTERN DIVISION.—Stephenson to Decatur, 83 2-10 miles, whole estimated cost of road fully equipped and in operation $1,527,546 07

Decatur to Tuscumbia, including branch to Tennessee river, 45 miles, estimated cost, fully equipped and in running order 507,321 93

Tuscumbia to Mississippi line, 24 3-10 miles, estimated cost of road and equipment when finished . .		586,613 44
Total cost of Eastern Division, fully equipped and in operation, 150½ miles of main road and 2 miles of branch—in all 152½ miles		$2,621,481 46
The expenditures upon this Division as per Treasurer's report, has been		1,431,325 40
Leaving yet to be expended to complete this Division,		$1,190,156 06
Western Division.—Memphis to La Grange, including Branch to Sommerville. 63 miles.		
Cost of construction and equipment when in full running order		$774,933 81
La Grange to Big Hill, 30 4-10 miles, cost of construction and equipment when finished		748,448 00
Big Hill to Alabama line. 41 6-10 miles, cost of construction and equipment in running order .		795,400 00
Estimated cost of the entire Western Division when finished and in operation		$2,318,781 81
By amount paid on above as per Treasurer's report, to 1st March, 1855		1,222,512 21
Leaves amount yet to be expended . . .		$1,096,269 60
Entire Cost of the Road.—		
Eastern Division, 152½ miles		$2,621,481 46
Western Division, 134¼ miles		2,318,781 81
Whole length, 286¾ miles		$4,940,263 27
Making the cost of the whole road, including branches, 286¾ miles, when finished and fully equipped, $4,940,263 27, or $15,228 per mile for road construction, and $17,228 per mile for construction and equipment.		
Deduct from the entire cost, the amount paid to 1st of March, 1855, as per Treasurer's report:		
Paid on Eastern Division . .	$1,431,325 40	
" " Western Division . .	1,222,512 21	$2,653,837 61
Will leave the balance to be expended to complete and fully equip the road		$2,286,425 66
Add to this the present liabilities		103,173 10
Prospective interest on State bonds		54,000 00
		$2,443,598 86
Deduct from this sum the available assets on hand		
Eastern Division . .	$478,872 01	
Western Division . . .	1,201,544 19	—1,680,416 20
Leaving the amount to be provided to finish and equip the entire road.		$763,182 66

The foregoing estimates are for the road when finished and fully equipped. The policy adopted by the Board heretofore, has been to put as little of the means of the Company into any thing else than road bed and iron as possible, as the road when finished can supply the means to equip itself, should the Company not be able to raise the money for that purpose without making too great sacrifices.

When we reflect that about one-half of this line passes through a country comparatively rugged, and that it crosses the Tennessee on a bridge at a point where the river is nearly, if not quite, as wide as the Mississippi at St. Louis, we are at a loss to account for the great difference between the cost of this road and the roads in Missouri and Illinois.

NORTH MISSOURI RAILROAD.

We learn that the track has been laid from St. Louis to the Missouri River opposite St. Charles, and we notice that a lot of wheat was transported over the road about the middle of July. We are informed that the line from St. Louis to St. Charles will be opened to the public some time during the present month.

COMPLETION OF THE ILLINOIS CENTRAL R. R.

Yesterday morning about half past seven o'clock the "Construction Train" came through to the terminus of the road, opposite this city. Passenger trains we understand will commence running regularly to and from Dubuque and Dunleith on Monday next.

Monday next will then be an important day in the annals of Dubuque and of the entire Northwest and as such should be commemorated by our citizens in a becoming manner. "Peosta" in this mornings paper proposes that the celebration take place on the 4th of July next. Should our citizens agree with the suggestions, we have no objection to a combination of the Railroad celebration with a proper demonstration on the anniversary of the American Independence.—(*Dubuque Express & Herald, June* 6, 1855.

☞ The completion of this work was celebrated at Dubuque on the 18th ultimo.